

*Chrysanthos no reputation of Dorian, Eolian,
and Sapphic*

G R E A T T H E O R Y

O F

M U S I C

B Y

C H R Y S A N T H O S O F M A D Y T O S.

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INTRODUCTION

Chrysanthos from Madytos is the reformer of the musical notation used in the Greek Orthodox Church. In 1814, in collaboration with the musicians Chourmou-zios Chartophylax and Gregory the Protopsaltes, he formulated his system, known since as the New Method.

A few years later, Chrysanthos was expounding the reformed system of notation in two books, the larger of which is hereby translated.

The following pages supply Western readers with the background information that I consider elementary for the understanding of the book and the estimation of Chrysanthos' place in the history of Greek Church music.

The Greek Orthodox Church

The history of the Greek Orthodox Church starts on May 11, 330, with the inauguration of Constantinople, capital of the Byzantine empire and see of the Oecumenical Patriarch, the head of the Greek Orthodox Church. Around 1300 Ottoman Turkish conquests began, and on May 29, 1453, after one and a half centuries of conflicts and the gradual weakening of the Empire, the Turks captured Constantinople, marking thus the end of Byzantium.¹ Its Church, however, remained active as the religious and political leader of the enslaved po-

¹The various places within the Empire mentioned in the Introduction are marked on the two maps (Plates I and II). Those with an asterisk refer to Plate II.

pulation. It was the Ottoman policy to consider the religious minorities under domination as "milet" (nations) governed by their religious leaders and their own laws. The head of the church--in this case the Great Church, as the Patriarchate of Constantinople is called--was expected to see that the interests of the rulers would not be hindered by those of their subjects. In order to carry on such a difficult task, the Great Church was offered economic, administrative and political privileges. The continuous effort to preserve those privileges caused frequent conflicts with the interests of the Greek people and led to harmonious relations of the Church with the Ottoman rulers.¹

The distrust of the Greeks towards the Great Church in Constantinople was rising gradually to reach its summit in the eighteenth century. This century marks the spiritual awakening of the enslaved Greeks. A fresh interest in the letters and the arts bloomed, coexisting with the desire for freedom. It was the Enlightenment, and, as elsewhere in the past, in Greece too the Enlightenment was connected with the revival of the Hellenic civilization. In Greece, moreover, the revival of this civilization was the means to inspire the dominated people with the pride of a glorious origin, with national consciousness.

Towards the end of the century this pride, together with the spread of the ideas of the French democracy and the news of sporadic revolts within Greece by heroic individuals or groups, brought a surge of enthusiasm.

¹For a description of the position held by the Patriarchate of Constantinople during the years 1453 to 1821 and its attitude towards the Greek people, see Steven Runciman, The Great Church in Captivity (Cambridge, 1968), pp. 391-406.

The "Gate" (the Ottoman government) seeing an imminent revolution, exploited the Church's eagerness to retain good relations with it. It compelled the Patriarch of Constantinople to anathematize the "athe-

The reactionary character of the Orthodox Church; a result of its privileged position

istic French people," while

it forced the Patriarch of Jerusalem to publish the "Paternal Exhortation" where the Ottoman rule is extolled as "created by God" and freedom "is the devil's child, it is opposed to religion, inflicts poverty, murder. . . complete impiety and the loss of the soul."¹ Acts such as these were certainly increasing the discontent of the people towards their head, and were further animating their desire for freedom. The revolution rather than being prevented was hastened.

It started in Peloponnese* in 1821 and in the following decade the modern Greek state expanded to its earliest boundaries.* Constantinople was not within these boundaries.

In 1833, the dependence of the Church of Greece on the Patriarchate--installed in a foreign and hostile country--being impossible, the administrative independence of the Church of Modern Greece was decided.²

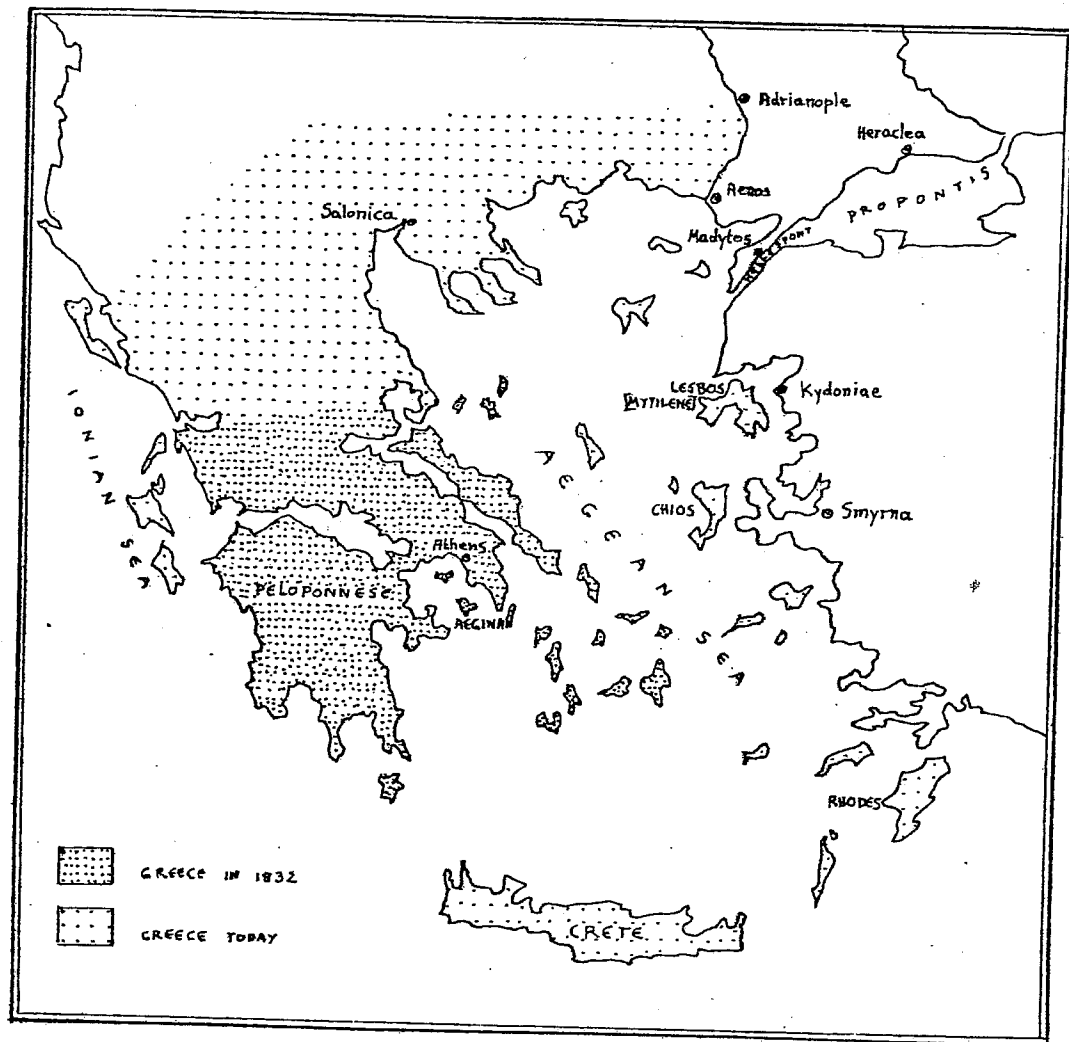
The Music

During its long history, the Greek Orthodox Church developed a music which perfectly serves its dogma and austere principles. The general characteristics of the

¹C.N. Sathas, Τουρκοκρατημένη Ἑλλάς. 1453-1821 ("Greece during the Turkocracy; 1453-1821") (Athens, 1869), pp.632-633.

²Spyros B. Markezines, Πολιτική Ἱστορία τῆς Νεωτέρας Ἑλλάδος ("Political History of Modern Greece") (4 vols) (Athens, 1966), Vol. I, p.119.

PLATE II



MODERN GREECE

Greek church music are that it is monophonic and absolutely vocal. There exist no instrumental compositions or instrumental accompaniment of the voices.¹ The relation of the text to the music was so close that the artists of the fifth to eleventh century--the period most productive in original works--were all composers as well as poets of the hymns.

The productivity of those early hymnographers was so abundant that towards the middle of the eleventh century there were enough chants for the liturgies of the entire year. The liturgy was codified and there was no place for new hymns to be written. This did not diminish the productivity of the hymnographers; it limited it to musical composition only. The music of the codified liturgy was repeatedly elaborated with several forms of variation and especially with melodic embellishments of varied length, with the result that gradually a highly florid style developed.²

We are now going to get a closer look at this development, examining the characteristics of the various stages of the musical notation, which coincide with those of the music.

The Notation

It is of general acceptance to divide the development of the musical notation of the Greek Orthodox

¹Many early Byzantine churches had organs (at first hydraulic and later pneumatic ones) but they were not used for liturgical purposes. See Egon Wellesz, A History of Byzantine Music and Hymnography (2d. ed.; Oxford, 1962), pp. 105-106.

²The creation of entirely new hymns went on in the Greek Orthodox monasteries of Southern Italy.

Church in the following four stages:

- 1) Early Byzantine notation; 9th-12th century.
- 2) Middle Byzantine notation; 12th-15th century.
- 3) Late Byzantine notation; 15th-19th century.
- 4) Post Byzantine notation (Chrysanthean); 19th-20th century.

Plate III shows a page from a manuscript belonging to the earliest stage.¹ What is remarkable in this re-

The vagueness of
Early Byzantine
notation

presentative example is
the scarcity of the neumes.
There are many syllables
of the text which bear no
musical signs over them.

To explain this fact a theory was forwarded that the notation at this stage was operating as an aid to the memory of the chanters. It is believed that the signs were symbolizing the contour of short melodic lines with which the chanters were familiar through oral tradition.

Examining now the example in Plate IV, which is from a manuscript of the second stage, we remark that the writing of neumes is here much denser. Some syllables bear two or three neumes over them, while others are prolonged.² From that period on, musical notation exhibits a perfection, the degree of which was never reached in any phase of the development of Western notation. In the opinion of Egon Wellesz, it can only be compared with modern scores where the indications

¹The loss of all manuscripts--together with other works of art--before the ninth century, a span of time that includes the Golden Age of Byzantine hymnography, is most possibly due to the ikonoclastic controversy (725-842) during which many objects of worship were destroyed.

²The prolongation of syllables is indicated in Byzantine notation with the restatement of the vowel of that syllable.

μεταίσοι

οὐ γὰρ ἄλλοι τὸ ταύριον αὐτοῦ αἰωμάσι· Δ' Θ'
 εἰ ποὶ οὐ γὰρ ἄλλοι αὐτοῦ αἰωμάσι· ω θ'
 τις τὰ θύρα γὰρ δέ σου· πάλιν σὺ ἀνέβη·
 τὴν σὴν γὰρ ἀνέβη ἀνέβη· διὸ αὐτὸς αὐτὸς
 θέλει ὑποταγῆναι τοῖς νόμοις αὐτοῦ·

Δ' Κολοῦ ἀνδρέου ἱεροσολιμίτη

Ἀσμεῖα μου· ὑμῶν αὐτῶν· ὡς τὸ πλεονέκτημα καὶ
 τοῦ λαοῦ αὐτοῦ· ὡς τὸ πλεονέκτημα καὶ
 σὺ σὺ τὴν ἱσραὴλ· ἐν θάλασσῃ βρυθῶν· ω
 ἴδτε ἴδτε· ὅτι ὡς ἔλεος· ὡς τὸ πλεονέκτημα τὴν κτί
 σιν· τὴν σὴν φιλίαν· καὶ ὡς τὸ πλεονέκτημα
 σας· καὶ ἐν τῇ σὴν γὰρ· ὡς τὸ πλεονέκτημα
 τὸ πλεονέκτημα· ὡς τὸ πλεονέκτημα τὸ πλεονέκτημα· καὶ
 τὴν γὰρ τοῖς ὕδασι· ἐν τῇ σὴν γὰρ· ὡς τὸ πλεονέκτημα
 αὐτοῦ· ὡς τὸ πλεονέκτημα τὸ πλεονέκτημα· ω
 ἡ σὴν γὰρ· ὡς τὸ πλεονέκτημα τὸ πλεονέκτημα· καὶ
 ὡς τὸ πλεονέκτημα τὸ πλεονέκτημα· ὡς τὸ πλεονέκτημα
 ὡς τὸ πλεονέκτημα τὸ πλεονέκτημα· ὡς τὸ πλεονέκτημα

EARLY BYZANTINE NOTATION

Cod. Patriarch. Hierosolym. Saba 83, fol 48 r.

ΤΟ ΚΟΡ Ο ΜΟ ΛΟ ΓΙΙ ΚΟΤΕ. ΚΑΙ ΠΙ
 ΕΦ ΔΟ Φ Α () ΕΙΡ. Ι ΡΑ ΚΑΙ ΑΥ ΤΟΙ
 ΣΩ Η ΜΙ Ι Ι Ρ. Ο ΜΟ Φ Ρ Ο Ρ Ω Σ
 ΜΟ ΛΑ ΛΑΥ ΟΥ ΣΙ. ΔΛ Δ' - Λ
 Ω Θ : ΠΟΛ
ΜΗ ΤΕ ΡΑ ΣΕ ΤΟΥ ΘΕ ΟΥ ΓΙ ΡΩ ΣΚΟΡ
 ΤΕΟ. ΒΥ ΦΩ ΡΑΙ Σ Α Σ ΜΕ Ρ Ι Ω Ρ ΟΙ ΠΙ
 ΦΟΙ ΣΕ ΜΕ ΓΑ ΛΑΥ Ο ΜΕ ΒΥ. ΔΛ Δ' - Λ
 Ω Θ : ΠΟΛ
ΛΑΓΡΑ Ψ ΤΕ ΘΕ Ο ΤΟ ΚΕ ΨΑΡ ΘΕ ΡΕ
 ΣΕ ΜΕ ΓΑ ΛΑΥ Ο ΜΕ ΒΥ. -
 Ε Δ' ΚΟ Χ Η ΛΙ ΠΡΙ ΔΕ ΕΙΣ ΤΕ ΠΑ
 Η ΜΕ ΒΡΟ ΓΛΑ ΦΑ ΡΟΝ. Δ' - Χ Λ
 Ω Α Η ΠΟ
ΘΑΥΜΑ ΣΙ Α ΤΑ ΕΡΓΑ ΣΟΥ ΚΥ ΡΙ Ε.
 ΚΑΙ Η ΨΗ Η ΜΟΥ ΓΙ ΡΩ ΣΚΕΙ ΣΦΟ ΔΡΗ.
 Ε ΚΑ ΛΥ - Ι Α Σ ΓΑ Ρ ΦΑ ΡΑ Ω. ΚΑΙ
 ΤΗ Ρ ΔΩ Α ΜΕ ΓΑΥ ΤΟΥ ΕΙ Σ ΘΑ ΛΑ Σ
 ΣΑ Γ Ε Ρ Ψ Θ Ρ Α Γ. ΚΑΙ Ε ΠΟ Δ Η Γ Η
 ΣΑ Π Λ Α - Ο Ο Μ. Ι Μ Ε Ρ Ο Μ ΣΟΙ Μ Ο Υ Μ

for the precise interpretation of rhythm and expression are given in words.¹

The principles upon which the notation of the second, third and fourth stages operate are that the neumes are

Principles valid to
all accurate Byzan-
tine notations

either quantitative or
qualitative. The former
indicate the notes, while
the latter the rhythmic
and expressive nuances

or ornaments of the notes (As will be seen below, p. xv, some of the neumes that belong in the first group symbolize quality as well).

The quantitative neumes are diastematic. They do not indicate frequency but the difference of two frequencies--not the pitch but the interval--and this approximately, not distinguishing the difference between major, minor, diminished or augmented intervals. These neumes become symbols of exact pitch with the use of the *martyriai* of the *echoi* (the signs of the modes), which stand at the beginning of every melody and act both as key signatures--whereby the intervals are indicated precisely--and as symbols of the starting pitch--whereby all following neumes symbolize some pitch too.

Middle Byzantine notation has attracted most musicological research. The interpretation of the manuscripts

The deciphering of
the earliest accu-
rate notation

of that period as given
in the first decades of
the twentieth century


by the Austrian Egon Wel-

lesz and the English H.J.W. Tillyard is today the one most largely accepted. These two musicologists have based their research on the "*Papadikai*." This is a name given to numerous manuscript manuals of the fourteenth to the nineteenth centuries, which give practical instructions.








¹Egon Wellesz, *ibid.*, p. 284.


on Late Byzantine notation. As it will be seen in p.xvii below, the notation at this stage was enlarged with a supplement of new signs, while it retained the neumes of the previous period. It is the instructions given in the "Papadikai" on those neumes that were commonly used in both periods that led to the deciphering of Middle Byzantine notation.¹


What one can draw from the "Papadikai" on Middle Byzantine notation is:

For every unison the ison  is used.





The neumes that indicate ascending intervals are eight:


The oligon , the oxeia , the petaste , the kouphisma  or , the pelaston  and the two kentemata  indicate the interval of a second.



The kentema  indicates the interval of a third.

The hypsele  indicates the interval of a fifth.








The neumes that indicate descending intervals are six:

The apostrophos , the two apostrophoi , called also syndesmos, the hyporrhoe  and the kratemohyporrhoon  indicate the interval of a second.

The elaphron  indicates the interval of a third.

The chamele  or  indicates the interval of a fifth.

The above neumes are subdivided into somata (bodies) and pneumata (spirits).

Among the ascending neumes, five are somata (the oligon , the oxeia , the petaste , the kouphisma  and the pelaston ) and two are pneumata (the kentema  and the hypsele .

Among the descending neumes two are somata (the

¹One "Papdike" entitled "Musical Grammar" is with its German translation in O. Fleischer, Die spätgriechische Notenschrift. Neumenstudien, III (Berlin, 1904), pp. 18-20.

apostrophos \curvearrowright and the two apostrophoi \curvearrowright) and two are pneumata (the elaphron \curvearrowleft and the chamele \curvearrowright).

The ison — , the hyporrhoe S , the kratemohyporrhoon $\cdot >$ and the two kentemata v are neither pneumata nor somata; they are neutral.

One remarks that somata are all the neumes for the interval of the second (except those named neutral) and pneumata are all the neumes that indicate intervals larger than a second. Somata, literally meaning "bodies," having weight move only by step, whereas pneumata, literally "spirits," being freed from matter, can take leaps!

We note that the system does not provide with neumes for the intervals of the fourth, sixth, seventh, etc. Such intervals are indicated by the composition of existing neumes, symbolizing addition of intervals.

Ex.1 illustrates a symbol of the ascending fourth composed by one of the neumes for the ascending second (the oligon —) and the neume for the ascending third (the kentema v).

Ex. 1. $\text{v} \text{—} = \text{—} \text{v}$

Ex.2 illustrates how the composition of a neume for the descending second (the apostrophos \curvearrowright) with the neume for the descending third (the elaphron \curvearrowleft) gives a symbol of the interval of the descending fourth.

Ex. 2. $\curvearrowright \curvearrowleft = \curvearrowright \curvearrowleft$

In the following three cases, however, the composition of neumes does not mean addition of the intervals:

1) All ascending neumes, we read in the "Papadikai," are dominated by the descending ones and by the ison. This means that in every composition of an ascending

neume with a descending one or with the ison, the former loses its diastematic capacity. Ex.3 illustrates the composition of the ascending neume oligon (—) with the descending neume elaphron (∩) symbolizing the interval indicated by the elaphron alone.

Ex. 3. ∩ = ↓↓


Ex.4 illustrates the composition of the ascending neume oligon (—) with the ison (⌊) symbolizing union, i.e., the quantity of the ison only.

Ex. 4. ⌊ = ↓↓

2) All ascending pneumata dominate the ascending somata when the latter are placed to the right or below the former. In other words, the neumes for the ascending second (somata) lose their diastematic capacity when neumes of larger intervals are written to their right or below them. Ex.5 illustrates how the pneuma (∖) being to the right of the soma (—), the interval of a second indicated by the soma is not added to that of a third indicated by the pneuma. Compare Ex.5 to Ex.1.

Ex. 5. —∖ = ↓↓

3) The same counts for descending neumes. The pneumata dominate the somata. Ex.6 illustrates the soma (⌋) losing its intervalic capacity because it has to its right the pneuma (×).

Ex. 6. $\neg x$ = 

To anybody not well acquainted with the modern system of notation the question will arise: "Why are there so many somata (neumes for the interval of a second) and what is the use of those compositions that do not represent additions of intervals?" The answer to this question--not given directly in the "Papadikai"--is that the somata, although they do not differ from each other with regard to their diastematic power, do differ with regard to the pronunciation of the interval. In fact, as mentioned earlier, each soma is both a quantitative and a qualitative neume. In a composition of neumes where the diastematic value of the soma does not count, its qualitative capacity does. A soma, therefore, determines the expressive, rhythmic and ornamental capacity of the neume it is composed with.


Following the descriptions in the "Papadikai," Wellesz and Tillyard have concluded the following transcription of the somata:

ascending


oligon — = 

oxeia / = 


petaste C = 

kouphisma \hookleftarrow = 

pelaston \hookleftarrow = 













two kentemata " = 

descending

apostrophos \neg = 

Next to this, the "Papadikai" give the list of the neumes that are purely qualitative, the Great Signs or Great Hypostaseis as they are called.

Following is a list of the ones that might be found in Middle Byzantine manuscripts together with their interpretation by the musicologists mentioned above.

diple	"	=		(double duration) or ritardando
tzakisma	∪	=		
kratema	⌒	=		
gorgon	r	=		or accelerando
argon	γ	=		or ritardando
apoderma	⌒	=		
bareia	∪	=		
psephiston	⌒	=		or 
piasma	∪	=		or diminuendo
xeron klasma	⌒	=		(placed over several neumes) =
mezzo staccato				
kylisma	⌒	=		

The list of Great Signs and their description goes on at great length in the "Papadikai." In most of them the purely qualitative signs are over forty in number.¹

It is this large supplement of Great Signs that distinguished the third stage of notation from the

Middle Byzantine notation.

Late Byzantine Notation: developments that bring progressive confusion

The developments of the Late Byzantine notation, which are responsible for the existence of the

"Papadikai" and consequently for the deciphering of Middle Byzantine notation by Western scholars, are also responsible for the decadence of music education which led to the reform by Chrysanthos.

¹See list of the Great Signs below, p. 170.

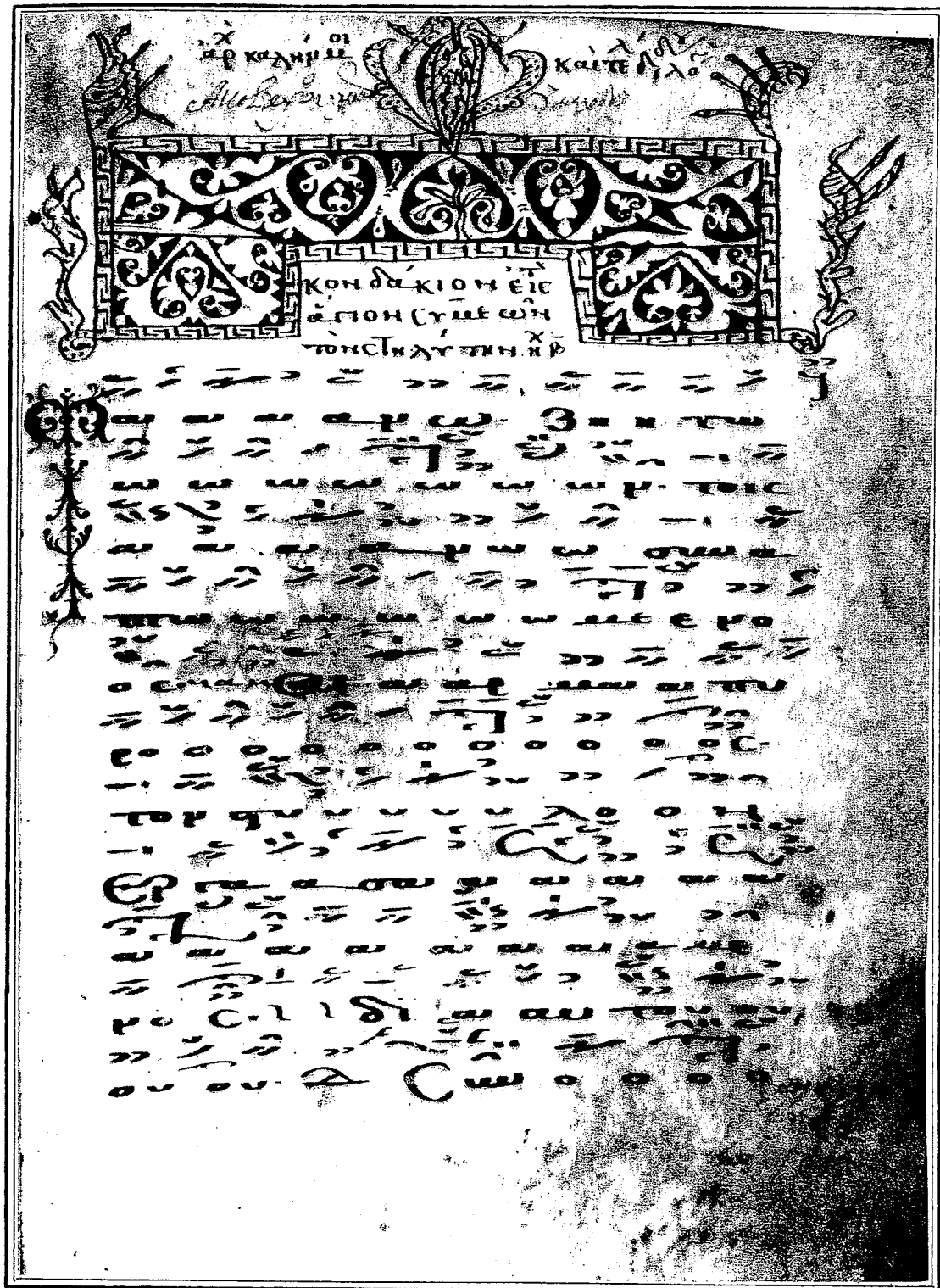
Examining the example in Plate V, taken from a manuscript representative of this stage, we immediately remark how the text is incomprehensible because of the extreme ornamentation. We see an entire line of musical neumes corresponding to just one syllable of the text. Indeed, the characteristic of the music of the time is the florid style and the diminishing importance of the comprehensibility of the text. Musical composition does not serve speech anymore, but vocal virtuosity. The composers now are not the poets of the hymns but virtuoso singers with renowned vocal abilities. They invent the supplementary neumes symbolizing the rhythmic, melodic and expressive subtle nuances and the sophisticated ornaments to which their vocal ability inspires them.

Nothing is positively known today regarding the exact meaning of this great number of signs. Want of clarity, it should be mentioned, is the characteristic of the literary style of the "Papadikai."

We do positively know, however, that the difficulty they lent to the teaching of the system, at a time of general cultural decadence--a result of the Ottoman domination--brought progressive confusion to the church musicians. All the more frequently the notation was misinterpreted or completely ignored, oral tradition gaining rapidly over the reading of music.

Illustration of the chaos

The earliest reference to "the need of characters for the music of the Greeks" is made in the mid-sixteenth century in a treatise of a student of Zarlino, a Greek-Cypriot named Hieronymos. Realizing that his fellow countrymen have some time since started to mis-



LATE BYZANTINE NOTATION

Cod. Ashburnham. L. 64, fol 45 r.

understand their notation and confuse the neumes with one another, he invented a system of his own, drawing

Attempts towards
a simplification
of the notation

from both Byzantine and European notation.¹ Hieronymos' system received almost no attention and was soon forgotten.

At about the middle of the seventeenth century several of the older music books start to be interpreted on the basis that the Great Signs are stenographic symbols and represent more or less lengthy groups of notes or extended melismas.² The interpretation given to these neumes, however, was not uniform all over Greece. Instead, the analyses of

the Great Signs are based on the tradition and the opinion of each teacher but not on art; and in one case they are chanted in one way and in the other in some other way; and in one echos (mode) they are chanted in one way and in another in some other way. And one teacher chants them in one way and another teacher of the same art in another way; and one teacher gives in one case a melodic line of some kind, a second teacher of the same art gives another interpretation and a third teacher something different.³

And every teacher of the same art invented his own "method of interpretation," improving the

¹Oliver Strunk, "A Cypriote in Venice," Natalicia Musicologica, 1962, pp. 101-103.

²The earliest "interpretations" known are those of Balasios (fl. c. 1670). There followed up to 1814 close to forty-five interpreters, among which Panagiotos Chalatzoglou, John of Trebizond, Peter the Peloponnesian, Peter Byzantios, Jacob the Protopsaltes, George the Cretan, Chrysanthos and his collaborators. See Gr. Stathis, "Ἡ σύγχυσις τῶν τριῶν Πέτρων," ("The Confusion with the Three Peters,") Βυζαντινά III, (Salonika, 1971), p. 244.

³"Γραμματικὴ Κωνσταντῖναι" Korae Library, MS 194.

system he had learned from his teacher.¹ The imperfection of these improvements was so clear that the Patriarch Gregory V showed great interest in the radical reformations proposed in 1797 by Agapios Paliermos. He recommended the introduction of the European staff notation in the Greek Church. The Patriarchate—conservative and hostile to the West, as usual—rejected this proposal. Agapios proposed then the adoption of an alphabetical system of his own invention, which was given more consideration but was rejected all the same.²

Although this conservative policy of the Patriarchate might be considered, from one point of view, valuable for the influence

The majority of Greek chanters ignore the notation system completely

it had in preventing an early break with tradition, its failure to use its power for the organization of the elementary

education of the majority of the Greeks, who did not have the opportunity to study abroad or in the schools of the Patriarchate, had destructive results. The level of education in Greece in the beginning of the nineteenth century was not higher than that of the elev-

¹From G. Papadopoulos, Συμβολαὶ εἰς τὴν ἱστορίαν τῆς παρ' ἡμῶν ἐκκλησιαστικῆς μουσικῆς ("Contributions to the history of our Church music") (Athens, 1890), pp. 312, 317, 318, 329, 331 and 324 we get the impression that the reform of Chrysanthos was the outcome of a sequence of similar perfections that started in 1756 with John from Trebizond. His system was perfected by his students George the Cretan and Peter the Peloponnesian and further, by the students of the former Gregory the Protospsaltes and Chourmouzios the Charthophylax, and of the latter Peter Byzantios, the teacher of Chrysanthos.

²See biographical notes on Agapios Paliermos below, par. 78 and n. 119, p. 251.

enth century in W. Europe.¹ Bearing this situation in mind, it is natural to assume that all the attempts to reform the notation, which were actually conceived either in Europe or in Constantinople, were known only to a limited circle of Greeks. The vast majority of the people were learning the music by heart, as sung in their immediate locality and were not in the least interested if their versions resembled the written prototypes, which they ignored. As early as the mid-seventeenth century European travellers expressed their surprise at the fact that the Greeks never use their music books, but learn the hymns by ear.²

In fact, musical notation was following two roads towards its decadence. The first one was created by the misunderstanding by the educated and the other by the ignorance of the uneducated. In the eighteenth century both roads had come to an end. European travellers, more abundant now, were shocked with the ignorance of the Greeks. The French Villoteau, the first Western musician to deal seriously with the music of the Greek Church, is frustrated because after a five-month search he finds only one person able to explain a "Papadike" to him and he does it incompletely.³ The Greek musician Constalas is exasperated with the whole situation. "What is the right thing," he asks, "is it proper that both teachers and students of this art, after so many years of endeavour, will end in

¹Spyros B. Markezines, ibid., p. 53.

²Jacob Goar, Euchologium Graecum (Paris, 1647), p. 349.

³This person was Gabriel, the first chanter in the Patriarchal Church of Cairo. Villoteau complains that Gabriel was unable to explain the function of the Great Signs. See G. Villoteau, De l'art Musical en Egypte, (Vol. XIV of Déscription de l'Égypte) trans. in Greek by Eug. Perdikares (Venice, 1874), p. 32.

finding themselves in the middle of a vast sea, not knowing where they are?"¹

This chaotic state began to improve, only with the reformation of 1814 achieved by Chrysanthos, Gregory and Chourmouzios, the Three Teachers as they are since known.

The Three Teachers²

Chrysanthos' last name was Karamalles.³ He was born in 1770 in Madytos,* a city near Hellespont. He studied church music with Peter Byzantios most probably in Constantinople where this famous teacher lived before 1805.⁴ Chrysanthos was also trained in European and Turkish music. Moreover, he had acquired a good reading knowledge of Ancient Greek, Latin, French and Turkish, which enabled him to study many theoretical works on music.

The undocumented story of his rising fame goes as follows. Chrysanthos some time before 1814 was a monk. He was teaching music, applying the results of his research for a simplified musical notation. This being considered much too innovating by the Patriarchate, he was expelled to Madytos, his birth-place. There, however, he went on with his teaching, up to the moment

¹"Γραμματική Κωνστώλα" Korae Library, MS. 194.

²Unless otherwise stated, all biographical information is from G. Papadopoulos, *ibid.*, pp. 329-334.

³C. Papademetriou, ed., Εἰσαγωγή εἰς τὸ θεωρητικὸν καὶ ποικιλικὸν τῆς Ἐκκλησιαστικῆς Μουσικῆς ("Introduction to the Theory and Practice of Church Music"), (Athens, 1940), p. 17.

⁴In 1805 Peter Byzantios, accused of bigamy, was expelled to Cherson.

that the efficiency of his method was greatly admired by Meletios, the archbishop of Heraclea* in Thrace, a very influential man.¹ With his intervention Chrysanthos was called back to Constantinople, where he collaborated with Gregory and Chourmouzos for an official reformation of the notation.

Chrysanthos is said to have written several works including transcriptions of Byzantine music to European staff notation and European music to Byzantine notation. He too wrote many "interpretations" of chants written in the so called Old Method² as well as two books on music that we shall discuss later. These books together with a few manuscripts is all that has been preserved. The rest was destroyed by fire.³

Gregory Levites was born in Constantinople in 1777 and died there at the age of forty-five. As a young man he was connected with Armenians and was taught their language and music. His father, wishing him to get a Greek education, sent him to a "metochi" of St. Catherine's monastery on Mount Sinai.⁴ Under the tutorship of the Father Superior Jeremy the Cretan he became an excellent chanter. He continued his music studies with Jacob the Protopsaltes, Peter Byzantios and George

¹The archbishop of Heraclea was entitled to enthrone the Patriarch of Constantinople. See D. Philipides and Gr. Constantas, Γεωγραφία Νεωτερονική περί τῆς Ἑλλάδος ("Modern Geography of Greece") (2d ed.; Athens, 1970), p. 143.

²Having no knowledge of the historical development of Byzantine notation, the inventors of the New Method gave this general name to all previous systems.

³Much more information is certain to exist in the thesis on Chrysanthos' life and work written in 1869 by Elias Alexandrides from Madytos, a graduate of the "Megale tou Genous Schole" (Great School of the Nation) in Constantinople. See C. Papademetriou, ibid., p. 15.

⁴"Metochi" is land owned by a monastery but situated far away from it.

the Cretan.¹ He was well trained by them in the "interpretative way of writing" which he further elaborated, abolishing many among the Great Signs.² He was also trained in Turkish music and played the instrument called pandouris.³

For his contribution to the reform of the notation he was rewarded with the office of the Protopsaltes of the Great Church (first chanter of the Patriarchate in Constantinople).

He left several "interpretations" and theoretical works that deal mainly with the scales and the alteration signs.

Chourmouzos Giamales was born on the island of Chalke in Propontis.* His teachers too were Jacob the Protopsaltes and George the Cretan. Before becoming the archivist of the Great Church--a position offered to him after 1814--he had been the protopsaltes in the church of St. Demeter in Tataoula, the church of St. John in Galatas⁴ and the church of the "metochi" where Gregory got his early musical instruction. The bulk of his work is far bigger than either of his collaborators. He is credited with seventy volumes of "interpretations," two manuals on the practice and theory of music and one voluminous notebook where he states all the merits of the Old and the New Method. He died in Chalke in 1840.

¹See biographical notes on these three musicians below, n. 92, p. 234; n. 111, p. 243 and n. 86, pp. 236-237 respectively.

²G. Papadopoulos states (*ibid.*, p. 329) that his "interpretations" can be read by any person acquainted with the New Method.

³See below, p. 183.

⁴Tataoula and Galatas are places in Constantinople which were almost exclusively populated by Greeks.

The Reformation of 1814


If in spite of the great need for a musical system, all previous attempts to achieve a reform had failed, it was because they all adhered to either of two extremely contrasted lines: one was a complete break with tradition, while the other displayed the traditional complexity and lack of clarity. The Three Teachers secured the success of the New Method by following a middle line. They endowed their system both with the simplicity, clarity and economy which permitted musical printing¹ (see Plate VI) and with the adherence to tradition--no matter whether substantial or just formal--that permitted the adoption of the Method by the conservative Patriarchate.


Contrary to their teachers, Chrysanthos and his collaborators had absorbed many elements of European notation and contrary to Hieronymos and especially to Agapios, they disguised those elements in Greek clothing.


The New Method preserved the earlier distinction between the quantitative and qualitative neumes. Although Hieronymos had invented additional neumes capable of indicating the exact size of the intervals,² the Three Teachers retained the use of the martyriai of the ehoi (the signs of the modes) which as said


¹The first printing types of Greek music were made in Bucarest by Peter Ephesios, a student of the Three Teachers. He published there in 1820 the first music edition (the Anastasimatarion and the Syntomo Doxastario by Peter the Peloponnesian). The first Greek musician to have his work published during his life time is Chrysanthos with his Εἰσαγωγή εἰς τὸ θεωρητικὸν καὶ ποικιλικὸν τῆς Ἐκκλησιαστικῆς Μουσικῆς ("Introduction to the Theory and Practice of Church Music") (Paris, 1821). (From now on referred to as Introduction.)

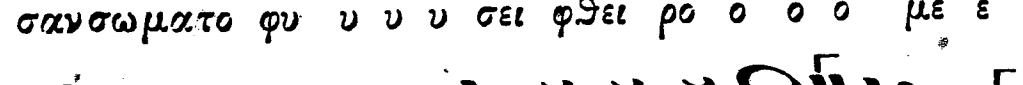
²Oliver Strunk, ibid., pp. 102-103.

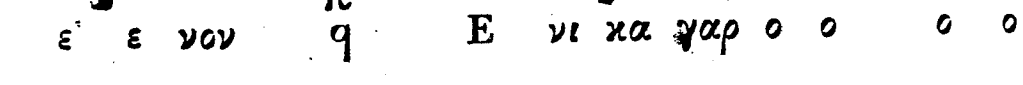

 ρου με ε νον ^βλ ε χαλκευσαν κιν θυ υ νοι ^Δδ

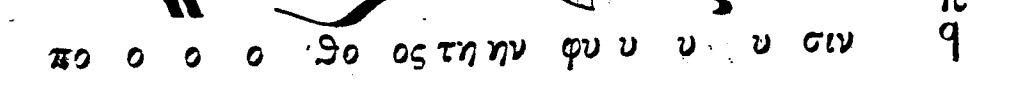

 και ε σο μωωσαν βα α α α σα α α α

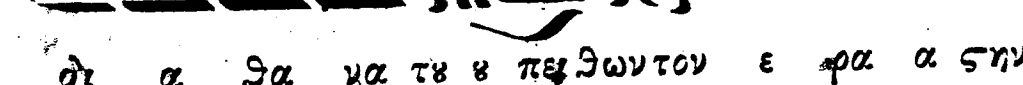

 νοι ^πq και ποι κι λαι κο λα σεις αν η λω ω

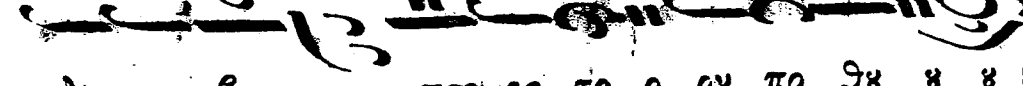

 σανσωματο φυ υ υ υ σει φθει ρο ο ο ο με ε


 ε ε νον ^πq Ε νι κα γαρ ο ο ο ο


 πο ο ο ο θο ος τη ην φυ υ υ υ σιν ^πq


 δι α θα κα τε ε πεθωντον ε φα α σην


 δι α βη ναι αι πρα ος το ο ον πο θα ε ε ε


 με ε ε ε νον ^πq Χρι σο ο ο ον τον

CHRY SANTHEAN NOTATION * MUSIC PRINTING

Doxastarion by Peter the Peloponnesian,
 Vol. I (Constantinople, 1848), p. 278.

above (p. xii) bring the same result with greater economy of means.

They also preserved the principles according to which the quantitative neumes operate in the Old Method, i.e., the double capacity (qualitative and quantitative) of the neumes for the interval of the second as well as the method with which the composition of neumes is achieved. Their system does make use, in other words, of the mechanism of combining the somata with the pneumata. The only difference is that the Three Teachers did not approve of these allegorical names "not only because this division is inconsiderate. . . but also because such prolixities are not permitted in music today."¹

The innovation with regard to the quantitative neumes in the New Method was their reduction from fifteen to ten.²

In connection with the qualitative neumes the reformers were more radical. Their system makes use of eleven among the forty Great Signs of the Old Method. It cannot be positively said how many and which among the Great Signs have changed their original meaning and whether the change was imposed by the Three Teachers or by earlier musicians. It is certain though that they subdivided the qualitative neumes, distinguishing them into rhythmic and expressive as is done in European notation.³ The rhythmic signs preserved in the New Method are the dipole .., the gorgon r, the argon 7 and the tzakisma u, which is now called clasma. Of the first three, derivatives were invented

¹Chrysanthos from Madytos, Introduction, p. 54, n. 1.

²See their list below, p. 10.

³The two groups are called "in-time" and "timeless" in this book (p. 45).

which express rhythmical subdivisions corresponding to those of Western music.¹ The gorgon was also used for the writing of tempo marks that express the value of one chronos (beat) in seconds or fractions of a second.²

Another disguised Western element, the application of which had most positive results in the success of the system and in music education, is the monosyllable sol-fa system that replaced the unhandy and fruitless solmization with the polysyllables of the intonation formulae.³ The disguised adoption of the Guidonian system⁴ was done by adding one vowel or consonant to the first eight letters of the Greek alphabet (pA, Bou, Ga, Di, kE, Zo, nE). A plainly formal change should also be mentioned, i.e., the substitution of all Turkish musical terms--largely used at the time--by Greek words.

Finally, the reformers expressed the theoretical values of the intervals in both the Pythagorean method, where the intervals correspond to the lengths of a string and are symbolized as its ratios, and the Aristoxenean system, used later in Europe by Ellis (born

¹The subdivision of two among these neumes were also contrived by Hieronymos in the mid-sixteenth century in an astonishingly similar way. See Oliver Strunk, *ibid.*, p. 103.

²See *below*, p. 48 and n. b, p.268.

³Concerning the polysyllable solmization system, see *below*, p. 25.

G. Papadopoulos says in *ibid.*, p. 333 that the new sol-fa system reduced the study of music to ten months from the ten years it required previously.

⁴Although Chrysanthos is aware of Guido's system (see *below*, p. 8, par. 21 and n. 1), G. Papadopoulos says in *ibid.*, p. 334 that the new sol-fa system was inspired by that of St. Ambrose, whom he credits (*ibid.*, p. 131) with the invention of the syllables ne, ou, tos, oun, a, na, ve, ne, ne, ou, tos, ke, ka, ta, ve, ne.

in the year of the Reformation), where the intervals are expressed as additions of a theoretical minimum unit.

The New Method, we are told by P.G. Pelopides (below, p. xl), was accepted by the Holy Synod and the three reformers were appointed to teach it in the third Music School of the Patriarchate, which operated from 1815 to 1821, the first year of the Greek Revolution.

The published works of Chrysanthos

In 1819 the Three Teachers charged their student A. Thamyras to go to Paris in order to supervise the publication of a manual on the New Method¹ designed by Chrysanthos, its author, as a school book. Its title in full is Introduction to the Theory and Practice of Church Music to be Used by the Students of the New Method. The book came out in 1821.

In 1820 Chrysanthos gave the manuscript of his Great Theory of Music to his student P.G. Pelopides², who eventually published it in 1832. This was something different, a work of much broader content and destination. As illustrated in its title, it is a general theory of music--not just of ecclesiastical music. It is not addressed to the students of church music alone, but to all Greek musicians and music-lovers. It is a secular work and, as such, the social upheavals of the time are clearly reflected in it.³

¹C. Papademetriou, ibid., p. 7.

²According to G. Papadopoulos (ibid., p. 341) Pelopides bought the manuscript from Chrysanthos.

³Certain musicologists misled by the delayed publication of the work, regarded it as an enlarged manual on the New Method. See, for example, M. Merlier, "Un manuel de musique byzantine, le 'Théoreticon' de Chrysanthos," Revue des Études Grécques, XXXIX, 1926, pp. 241-46.

Chrysanthos, the inventor of the New Method and the author of the Introduction is a clergyman who conforms to the restrictions of the Patriarchate.

Chrysanthos, the author of the Great Theory of Music is a liberal Greek, wholly participating in the Enlightenment, the movement that was most marked with the popularization of the classic works.

It is precisely the popularization of ancient Greek music theory that is one of the principal aims of this book.¹

Aristides Quintilianus' De Musica--the most complete ancient Greek treatise on music--besides being the main source of information on ancient Greek music, provided Chrysanthos with an outline for part I of his Great Theory. The distribution of chapters is similar in both works. Within this borrowed skeleton, Chrysanthos spread his knowledge on ancient Greek, Byzantine, Turkish and European music and the new system of Greek church music, already expounded in his Introduction.

The large number of sources known and used by Chrysanthos shows the extremely learned man he was, a fact which is striking when we consider the state of education in his time. Besides the sources mentioned (the Introduction, the content of which is transferred practically entire, and the De Musica, some chapters of which--the ones on rhythm--are transferred alike), Chrysanthos makes frequent use of works by Aristoxenos, Eucleides, Plato, Baccheios the Old, the philosopher Gaudentius, Constantin Porphyrogennetos,

¹It is, I assume, the abundant information on ancient Greek music in the Great Theory that lead some researchers to state that Chrysanthos has claimed that the "foundation of his musical system was rooted in that of Greek Classical Antiquity." (M. Morgan, "The 'Three Teachers' and their Place in the History of Greek Church Music," Studies in Eastern Chant, III, p. 86.)

Manuel Bryennios, Souidas, Gerasinos Nicomachos, Anthimos Gazes, Athenaeos the Deipnosophist, Manuel Chrysaphes the Old, Plutarch, as well as anonymous manuscripts, the Bible and French encyclopaedias.

These sources, however, are patched together in such a slipshod manner that they are of no avail to the contemporary critical reader. In many cases, Chrysanthos incorporates in the text entire fragments without caring for their stylistic and linguistic differences. He actually quotes them, but makes no use of quotation marks or correct reference notes, nor does he replace these modern devices in some other way. In some cases he provides rather underdeveloped translations of ancient texts, changing only those words that seem to him too archaic. The opening sentence of the book is an example of this practice; it differs with the prototype only in the verb "to be," the modern Greek εἶναι having replaced the ancient εἶσσι. Some times he gives the free translation of a fragment, or its paraphrase. Very often he collates the sentences of various different texts, either in translation or in the original language. Some of these practices--or even all of them--are frequently combined within a few lines. In a few cases he obeys the rules of correct quoting.

With similar inconsistency he writes his reference notes, which, however, are often missing. He usually gives either the name of the author alone, or the title of the work alone, or the author and a page number, or, when at his worst, an abridged name or title, e.g. "Arist.," which gives the reader a choice among any of the works by Aristotle, Aristoxenos or Aristides Quintilianus!

This careless way of writing leads to an unhomogeneous language and to a style that is greatly contrasted with the simple and flowing writing of the author's first publication. However, the patchy qual-

ity of the Great Theory, in spite of the aesthetic irritation it produces, points out obvious borrowings and guided me to spot a number of these hidden quotations. They are given in Appendix II, p.265. Their number, I think, is sufficient to illustrate how the work has been written and to show that most of the information it supplies on ancient Greek music is not "connaissances d' amateur"¹ but quotations or translations of ancient Greek theories, put together by an amateur writer.

Chrysanthos and the restoration of Byzantine music

Whereas Chrysanthos' aim was to invent a notation system that would assist the church chanters, certain

The misinterpreted
role of Chrysanthos

Western scholars have
totally misinterpreted
his intention. He was
considered a musicolo-

gist who tried to revive Byzantine notation, leading it to its "massacre" instead.² Chrysanthos, however, was lacking two important prerequisites for the undertaking of such a revival, i.e., musicological training and a basic knowledge of Byzantine history. Musicology was a field of studies that had not yet appeared in any part of the world, let alone in Greece of the early nineteenth century, which was still a province of Turkey.³ On the other hand, the study of Byzantine history which led to the admiration of the achievements

¹Melpo Merlier, ibid., p. 243.

²J.-B. Rebours, Traité de Psaltique. Théorie et pratique du chant dans l' Eglise grèque (Paris, 1906), p. xiii.

³Still today this science is not taught in any Greek educational institution.

of Byzantine civilization was only just beginning in Chrysanthos' time. Byzantium then was more despised than appreciated and considered a more a less decadent civilization, in shameful contrast to the glorious antiquity.¹

It is obvious, therefore, that the revival of Byzantine music is something that no Greek of the early nineteenth century could have undertaken.

I do not underrate to what degree Byzantine civilization has been connected with the tradition of the Greek Church and the possibility, therefore, that such a revival could have been achieved from religious rather than aesthetic need. But then, here again, the ignorance of the historical development of Byzantine civilization before or after 1453 did not permit any doubt as to the continuity of the tradition. Moreover, the lack of admiration for that civilization gave to the various revisions and modifications of its music by post Byzantine composers the names of improvements or perfections. There was nothing then to give birth to the present belief that the art of the twelfth century was better or more suitable to the church than that of the eighteenth century. The hymns sung in the nineteenth century were considered by the Greek clergy--Chrysanthos too--intact preservations or perfections of the old hymns, accomplished by their numerous interpretations.

¹Byzantine history was taught in the first Greek University--the University of Athens, founded in 1837--fifteen years after its opening. And the esteem for this civilization started really in the late nineteenth century. In 1859 a professor of the University was lecturing on the "lack of critical mind, method and aesthetic judgement, which are the general characteristics of the Byzantines." (C. Paparregopoulos, Προλεγόμενα ("Prolegomena") (2d ed.; Athens, 1970), pp. 12, 39-41).

The dissemination of the New Method

The dissemination of the New Method was not instantaneous. After the closing down of the third Patriarchal music school in 1821, many of its students were appointed to teach in various Greek schools. Because of the state of Greek education described previously, schools were to be found mostly in the rich Greek colonies in Europe and the Eastern Greek provinces that were under the influence of the Patriarchate in Constantinople. We learn from G. Papadopoulos,¹ for instance, that the first exponents of the New Method taught in the Greek schools of Jassy, Bucarest, Odessa, Vienna, Aenos*, Adrianople*, Kydoniae*, Mytilene*, Smyrna*, Chios* and Trebizond, but in none of the Greek provinces that were about to form the new, free Greek state. There, the official method was quite different. It consisted of a number of novel signs that had been invented by George of Lesbos and were taught for the first time in the town of Aegina*, one of the first capitals of Modern Greece. This system was later introduced in the oldest orphanage of Athens, but was finally condemned in 1848 by Anthimos VI, Patriarch of Constantinople.

Meanwhile, in 1844-45 Anthimos Nikolaides and John Chaviaras, chanters of the two Greek churches in Vienna, published in European staff notation a number of semi-traditional Greek hymns, cloaked in Western harmonies by August Swoboda, Gotfried Prayer and K.B. Randhartinger.² The Holy Synod of Constan-

¹Ibid., p. 375

²Details in P.E. Formozes, Οἱ χορωδιακές ἐκδόσεις τῆς ἐκκλησιαστικῆς μουσικῆς σὲ εὐρωπαϊκὴ μουσικὴ γραφή ("Choral editions of church music in European musical notations") (Salonica, 1967).

tinople excommunicated this practice in 1846 as "profligate" and generally unfit.¹ The charm of tertian harmony, however, is irresistible to the Greeks and the practice soon spreads all over the country. In 1870, after a series of heated articles in the periodical Αἰών (Aeon) by G. Mantzavinos, professor in the Ριζάρειος (Rizarios) theological school of Athens, a four-part choir is established in the Athens cathedral.²

In 1871 the first music conservatory is founded in Greece, the 'Ὀδείον Ἀθηνῶν (Athens Conservatory of Music). Alexander Catacouzenos, professor of the Conservatory, devises a new way of harmonizing church hymns "inspired by the Byzantine melodies but following the art of the Russian church."³ The system was applied in the royal chapel during the reign of Queen Olga, who was of Russian origin.

The Church, realizing in 1875 the popularity of harmonized hymns, permits them to be chanted in the Athens cathedral during celebrations of royal and national feasts.

In 1881 the Patriarch of Constantinople Joachim III orders the formation of a committee for the serious study of church music. The committee introduces standard pitch (c' = 256) and the use of the tuning fork, corrects the mathematical values of the intervals given by Chrysanthos and assigns a definite tempo to the various classes of church hymns, intro-

¹C. Papademetriou, Τὸ μουσικὸν ζήτημα ἐν τῇ ἐκκλησίᾳ τῆς Ἑλλάδος ("The musical question in the Greek Church") (Athens, 1921), p. 10.

²A list of Greek hymns translated in English and arranged for mixed choir, piano or organ is in J. M. Neale, Hymns of the Eastern Church (London, 1876), pp. 21-22

³C. Papademetriou, ibid., p. 13.

ducing the use of the metronome.¹ The findings of the committee were published in a manual, entitled Στοιχειώδης Μέθοδος πρὸς διδασκαλίαν τῆς Βυζαντινῆς μουσικῆς συνταχθεῖσα ὑπὸ τῆς ἐν Κωνσταντινουπόλει Μουσικῆς Ἐπιτροπῆς τοῦ 1881 ("Elementary Method for the Instruction of Byzantine Music composed by the 1881 Committee on Music in Constantinople"). In 1882, members of the committee built a musical instrument capable of reproducing the microtones in the traditional melodies of the Greek church. It was called the "Joachim psaltery" and, in shape, it was "similar to the harmonium."²

In 1903, the "Athens Conservatory of Music" decides to cooperate with the Church of Constantinople for the foundation of a school of Byzantine music in Athens. To achieve this, the director of the conservatory G. Nazos travels to Constantinople in order to find a suitable person to undertake the teaching of Byzantine music. On the recommendation of the Oecumenical Patriarch, he selects C. Psachos, who was a distinguished singer and author of several articles on Byzantine music. Psachos delivers his

¹The following values were assigned to the intervals: Ne--6--Pa--5--Bou--4--Ga--6--Di--6--Ke--5--Zo--4--Ne. Compare with the values assigned by Chrysanthos: Ne--12--Pa--9--Bou--7--Ga--12--Di--12--Ke--9--Zo--7--Ne. The committee makes use of five tempi: Slow 56-80 M.M.; Mid 80-100 M.M.; Moderate 100-168 M.M.; Fast 168-208 M.M.; Very fast (χῦμα) 208--double the value of "fast". ("Elementary Method for the Instruction of Byzantine Music composed by the 1881 Committee on Music in Constantinople," Phorminx, July 15-31, 1908.)

²C. Psachos, "Ἡ ἐπὶ τῶν τονιαίων διαστημάτων θεωρία τῆς μουσικῆς ἐπιτροπῆς 1881" ("The theory of tonic intervals by the music committee of 1881") Forminx, March 15, 1905

opening lecture in Athens, on September 23, 1904.¹

Thanks to the multifold activity of Psachos, the traditional monophonic chanting gains gradually in popularity over the four-part singing and the interest in the New Method grows. In 1911, after the publication of some chapters of the Great Theory in the periodical Phorminx,² the whole book is reedited by the printing house of Koussoulinos in Athens.³

Today, the teaching of church music in Greece is carried out according to the New Method as corrected by the committee of 1881.

¹G. Drosines, Γεώργιος Νάζος καὶ τὸ Ὀδεῖο Ἀθηνῶν ("George Nazos and the Athens Conservatory of Music") (Athens, 1938), p. 135.

²Nov. 15-30 and Dec. 15-31, 1910.

³The Introduction was reedited in 1940 by C. Papademetriou in Athens. An abridged version of it translated in French is in L.-A. Bourgault-Ducoudray, Études sur la musique Ecclésiastique Grecque - Mission Musicale en Grèce et en Orient, Janvier-Mai, 1875 (Paris, 1877), pp. 79-127.

PROLOGUE TO THE FIRST EDITION

At last, look dearest compatriots! A didactic book of musical science finally appears. The nation would have probably been deprived of this most valuable treatise, if in our times did not live a man of wide learning, a very musical man, the most holy, I say saint, Mr. Chrysanthos from Dirrachion.^a

As all scientific treatises are able to grant mankind with more or less profit, the present work, dealing with a science which, moreover, contributes, according to testimonies of the philosophers, to the praise of God, the well-being of our holy Church and the ennoblement of humanity, will offer no little benefit.

This Mr. Chrysanthos--a lover of his race--and his collaborators Mess'rs Gregory and Chourmouzios --the former protopsaltes (first chanter), the latter chartophylax (archivist) of the Great Church--met little before the revolution and, exchanging their philosophical and scientific ideas, discovered time in music and defined in many ways its measurement and divisions, as nothing is achieved in music without time. They defined the intervals of the seven tones through systematic scales in all the genera of music, as well as the intervals of the phthorae, by which the alterations and the transfer from echos to echos, genus to genus and scale to scale are done. They transformed the musical neumes from symbols into letters.^b In one word, they submitted our music, which

^aLetter indices refer to translator's notes, Appendix II, p. 265.

was up to then unruled though melodically varied, to rules in an admirable way.

Who could object to this, when seeing that the persons who command this method have the ability to chant with perfect fidelity foreign chants notated with our musical neumes, chants that they never heard before, and that they can write them with equal perfection, when they have only known them by ear? Certainly, no one. Therefore, these respectable men ought, no doubt, be called **BENEFACTORS OF THE NATION**.¹

¹When these three teachers appeared as the inventors of this new method in 1814, they had not such ranks. Mr Chrysanthos was archimandrite and Mr. Gregory was lampadarios. In 1819 Chrysanthos reached the rank of archbishop and Gregory succeeded the late Manolakes the protopsaltes and became protopsaltes himself, following the order of the Great Church. Mr. Chourmouzios got the rank of chartophylax.^c

These men, immediately after submitting music into rules, gave report to the Koinon of the Great Church. On this special occasion the Holy Synod was held under the patriarch Cyril VII from Andrianople. The most distinguished men of the nation were assembled there and this new invention was presented to them. The Synod being convinced with the strong reasoning and secure evidences of the three music teachers concerning the rules of the art (because at the beginning it was suspected that the teachers were looking to modernize holy psalmodie), it was decided that Gregory Lampadarios and Chourmouzios Georgiou deliver the practical part of ecclesiastical music, though the archimandrite Chrysanthos the theoretical part. For this purpose a school was founded in which free residence was granted to many among the poor students. Superintendents were appointed and the salary of the teachers determined. To all the high priests of all districts circular letters were sent, so that any one wishing to study music free of charge with the new method, might go to Constantinople, where after two years of studies, he would master the method. So, students of every class and age rushed from everywhere. Among these, the ones that were sufficiently successful, went to various cities where they organized special schools and communicated the task entrusted to them with fidelity.

After passing their examination, the students that

Besides this great benefaction of the three teachers to us, the learned Mr. Chrysanthos especially, benefitted the nation by writing with philosophical spirit this didactic, as well as philological treatise of musical science.

Accept it now my most musical friends. Fulfill your extreme desire for such a didactic book of your art. Learn, from now on, what is rhythm in music, what is foot and meter.² Learn what is rhythmical emphasis and do not wonder any more about the meaning

mastered the method perfectly, were given a certificate letter, undersigned by the three teachers and the school's superintendents, which runs as follows:

"We, the undersigned teachers of this general school of music in Constantinople, announce, to whom it may concern, that Panagiotes Pelopides, Peloponnesian, after studying with us, was sufficiently distinguished and is able, wherever he goes, to teach and deliver both the practice of the new method of music ordered by us and what is methodically required for the introduction of its theory. As certificate and evidence of this, the present is edited by us the teachers and approved by the superintendents of this music school, as is the custom.

Constantinople, September 28, 1818."
There follow the signatures of the teachers and the superintendents.

The school lasted up to 1820 because that year Mr. Chrysanthos went to the district of Dirrachion to pasture the flock that was consigned to him. Mr. Gregory fulfilled our common duty and was succeeded by Mr. Costes Byzantios. Mr. Chourmouzios, left alone, turned to other useful occupations. Through his activities a musical printing house was established in the Patriarchate which edited sufficient amount of chants, the most necessary to the chanters, releasing thus many persons from the tiring task of copying. Mr. Peter the Ephesian, a student of the same school and resident of Bucarest, offered the same kind of service too.

²The extremely clear and precise exposition of the rhythms, the chronoi, the feet and the meters given by a learned musician, is, doubtless, going to be of special avail to those who study the poetical works of our ancestors.

of such words. Learn the art of chant-making and the way to compose the melodies with scientific thought, so that you will become able to give rise of joy, sadness, languidness and any other feeling among the psychic passions of your auditors. You will also be able to boast that you are a perfect musician, who knows about music.

Many of our musicians, successful in mastering the knowledge of the exact measurement of time and the exact intervals of the phthorae (and it is indeed prais-worthy for any musician to succeed in mastering these two) think that they are perfect musicians. This is not the result of obstinacy and haughtiness, but of insufficient knowledge. Lacking a didactic book of their art, they are unable to improve the knowledge they acquired through oral tradition.

The author divides his work in two parts, the didactic and the historic. In the didactic he speaks with great wisdom about musical theory and practice and gives undeniable and scientific evidence of what this material requires. Speaking extensively in the last chapter on harmony, he concludes the didactic part with an example notated in European notes, which he himself transcribes in our musical neumes. Through this he gives to the Greek musician a clear illustration of how to write harmony, of which we have preserved the name only, though the Europeans have preserved its essence.

In the historical part he enumerates the musicians that existed before the Flood and up to our days, mentioning many Europeans as well. He divides them into three periods. In the first he mentions those who lived before the Flood up to the days of the wise Solomon. In the second he mentions the Greeks. There he names as the first inventors of

Greek music Apollo, among the Gods, and Amphion among men. He reaches the musicians of the Christian era and speaks in chronological order about them and their inventions or their writing on music. In the third period, he mentions the distinguished ecclesiastical musicians. Beginning with St. John Damascenos as the older teacher and originator of our ecclesiastical music, he reaches our age and names in chronological and alphabetical order all the inventors of psalmodies distinguished by time.

In the didactic and the historical parts he introduces by way of foot-notes, some standard literal treatises, valuable to every one--musician or not--but especially to many among our scholars who ignore even today the very origins of our ecclesiastical music and, consequently, its development, which, however, does not deserve little curiosity by them and the Holy Society. He completes the historical part with a short appendix, where he gives very wise advice to the musician, how to pursue his profession and which natural talents he should possess.

I received this treatise twelve years ago from its mentioned learned author and my respected teacher, while I was studying in Constantinople. Desiring since then its publication by the author himself or by any one else, and failing with this greatest of my desires, only now, in the present year, am I able to perform this work, so useful to the public, with no little personal monetary expenses and effort: the printer being foreign speaking and not accustomed to publications of such tiring and varied books--due to the variety of the neumes of our music--needed daily, continuous and in many ways tiresome supervision from me. My efforts were not similar to the efforts of other editors. Nevertheless, I did

not take this into consideration, because I did not want this valuable work, of such great merit, to remain still hidden, especially now that our beloved country reawakes.

So, accept dearest compatriots the humble testimony of my desire for the public's profit. Be thankful to the author as he fulfilled his duty to the nation (he expresses through me the wish to see his efforts bearing fruit of equal value, so that he might feel proud that he first caused the rivalry among those who, from now on, will decide to write with wider ideas on music) and love favourably your dear editor.

Trieste, April 6, 1832.

Panagiotes G. Pelopides.

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THE THEORY AND PRACTICE OF MUSIC

FIRST BOOK

CHAPTER I

How music is defined and divided

1. Music is the science of chant and the events related with it.¹
2. Chant is a series of notes that succeed each other and are pleasing to the sense of hearing.²
3. Note is the musical attack of a sound upon a single tension, which is to say that note is emission of sound by the human mouth, a pipe or a string whose tension is one. Therefore, the sound emitted by a string while stretched is not called note, as it occurs on many tensions.^b The

¹Thus does Aristides define music.^a Plato defines it thus: "Music is the imitation of the behaviour of more or less virtuous and evil men." Nicephoros Blemmydes defines it thus: "Music is the knowledge of the quantity of defined relations." Hermes thus: "Music is the order of all things."

In early times the subject, the latitude and the parts of music were greatly debated upon, as, at the time, the word music had a much broader significance than it has today since it did not mean solely song, poetry and dance, but included the study of all sciences as well. The Athenians, therefore, gave, according to Hesychios, the name music to all the arts and the philologists were simply called philomuses. Among the circles of Pythagoras and Plato, moreover, it was said that everything in the world is music. Indeed, the philosophers say: sacred music, secular music, heavenly music, human music, active music, mental music, declarative music, instrumental music, vocal music etc.

²According to Baccheios, chant is looseness and tension produced by musical notes.

sound attack, moreover, must be productive of chant since one single sound emitted by a string with no respect to chant is not called note, but noise emitted in vain. The notes are the subject or matter of music. Regardless of whether they are emitted by the human mouth, by wind, stringed or percussive instruments, it is possible for good musicians to distinguish them precisely and discern them un-
failingly. This is why Aristides said that music is a science.³

4. Chant is distinguished into what is called perfect and into imperfect or melody. Melody is a rhythmless interweaving of notes differing in height and lowness. Perfect chant though, is the one which consists of melody, rhythm and text.⁴ Sacred chant is called psalmody.⁵

5. We are aware of two constituents of chant: the quantity and the quality. The neumes, therefore, used to notate the chant are examined in two ways in order to include all its aspects.

7. One sings or chants unartistically^d when, although ignoring the rules of music, he utters many notes succeeding each other and pleases the listeners.⁶ One chants

³This is how Eucleides defines the note.^c Baccheios defines it thus: "Note is attack of a sound on one musical tension."

⁴Aristides, book I, p.28.

⁵The name psalmody covers all ecclesiastical chants, the asma, the ode, the kontakion, the troparion, the apolytikion, the hypakoe, the oikos, the sticheron, the aenoi, the makarismoi, the kononikon, the cheroubikon etc.

⁶When we reflect on the satisfaction caused by music to one of the senses, namely to hearing, we see that it seldom happens an unartistically chanting person to be better liked than an artistically chanting one. It is though possible to find the same chant pleasing to some and to others not. This is especially true with listeners of different countries whose hearing is not accustomed to similar chants. Because indeed, every place has its own music, no matter whether abundant or not, which is liked by its natives only. Therefore, the more a musician is occupied with

artistically when, knowing the rules of music, articulates the chant designated by the neumes, as taught to do. Only the perfect musician however, chants scientifically.⁷

8. Perfect is called the musician who is able to chant giving rise to pleasure, grief, enthusiasm, languor, impetus, courage, fear, or anything else that has the power to move the soul to any passion. Moreover, he is able to compose chants, as he knows precisely the events connected to them: notes, intervals, tones, echoes, systems, rhythms, harmony, text etc.

9. Music is divided into theory and practice. Theory is the knowledge of the matter of music, i.e. to know the relations between lowness and height (by which the quantity of chant is learned); the relations between fast and slow plus the modes of generating the notes (by which the quality of chant is learned) and the knowledge of the power bestowed upon the neumes to write the chant.⁸

the knowledge and serious study of these diverse musical practices, the abler will he become to find varied and efficacious chants, since the music of every nation is rich in some efficacy, depending on the natural national inclinations. The actual French dances, for example, are graceful and light and instill the appetite for dancing with such vitality as is sufficient to give rise to joy, but not to fatigue. The British dances, on the other hand, are exciting, being somewhat impetuous and instigate the dancer to running and dancing until he gets tired. As for the Polish dances, they are modest and serious. It is indeed more charming to walk as the Polish do than to dance like them.

⁷Baccheios says: "A musician is one who knows about the concurrences of melodies."

In early times the musician had to be a philosopher, a poet and one among the first-order men, because music had to be able to move the soul of the listeners to such passions as required by the necessity of the times. This means that it should be able to "mould and modulate the souls of the youths towards perfection." Plut.

⁸Porphyrrios left another division of music, saying that it is divided into rhythmic, for dance movements;

10. Practice is the faculty that puts into application the principles of theory; the ability, that is, to chant and notate music with the neumes using the materials of music that have been learnt.

11. Theory is subdivided in the knowledge of note-relationships and interval-sizes, including also the practice of the neumes by which these are written and in the comprehension of time flowing in chant and the practice of the corresponding neumes. The Ancient Greeks named the first

metrics, for the terminations and number of syllables; instrumental, for the use of instruments; poetics for the harmony and meter of the verses; acting for the settings of the mimics; and harmonics for singing.

One could still divide music into natural and imitative. The natural confines itself to the nature of notes alone and does not take into consideration the meanings nor does it produce any impressions on the soul; it only gives more or less agreeable feelings. Such is the music of the psalmody, that is of the *asmata*, the odes and of all that which are nothing more than conjunctions of musical notes; in general, of all melodic music. The imitative though, with vivid and intense twistings, or better said, with twistings that speak, exposes all passions, paints all pictures, gives all the subjects, teaches with its wise imitations the whole of nature and brings into the human heart feelings capable of agitating it.

Aristides divides the entire music into theory and practice. He then subdivides theory into natural and technical and shows that there are two parts in the natural (the one is the numeric and the other is synonymous with each of the existing genera) and three parts in the technical (the harmonic, the rhythmic and the metric). Practice, on the other hand, is separated into the application of the above mentioned and into their realization. The parts of the application are chant-making, rhythm-making and poetry and of the realization instrument-playing, singing and acting.^e

The Europeans use to divide music into melody and harmony. They call melody the chant sung by one person only, whereas harmony the chant sung by many persons who do not all hold the same *ison*^f but one holds a deep one, the other a higher and the other a still higher one. As for rhythm, it is considered by them as a study limited to one particular branch of music.

subdivision harmonics because it teaches what harmony consists of, excavating up its foundations and discovering the ways in which the notes dispose the ear pleasingly. The second they named rhythmic because it considers the notes in relation to time and includes the exposition of feet and rhythmic species, clearly stating which are the long and short, the slow and fast parts of time.

12. Practice is subdivided into chant-making (melopoeia) --which does not only refer to the application of the various chants, but also to the making of one's own chants pleasing to the listeners--and rhythm-making (rhythmpoeia) which gives the application of those rules that govern the adjustment of time-meters and rhythms to the notes of the melody, in order to bring into completion the perfect chant.

13. The Ancient Greeks handed over to us three genera: the diatonic, the chromatic and the enharmonic. The diatonic is the most natural of the three, the oldest and the easiest. The chromatic is more artful, more recent and more difficult. The enharmonic is the most precise, the latest and the most difficult.⁹ They also handed over to us three systems, the diapason, the wheel (trochos) and the triphony.

⁹"Every chant occurring in the hermosmenon^h is either diatonic, chromatic or enharmonic. First and earliest should be considered the diatonic, because it is the one human nature meets first. Second is the chromatic. Third and most recent is the enharmonic because this is the last that hearing gets used to and indeed, after much effort." Aristoxenos Harmonic Elements, I.

"The most natural of the three genera is the diatonic because it may be sung by everybody, even by the uneducated. Most artful is the chromatic because it is sung by the educated only. The precisest is the enharmonic because it may only be transmitted among the most distinguished in music and is impossible to the many." Aristides, 19.

CHAPTER II

Concerning the quantity of chant, i.e. the notes^a

14. The quantities considered in chant are the ascent, the descent and the equality. In the diatonic genus and according to the diapason system, descent is a series of notes chanted with the following syllables and order:

pa, bou, ga, di, ke, zo, ne, Pa.

15. Descent is a series of notes chanted in the reverse to the ascending order, thus:

Pa, ne, zo, ke, di, ga, bou, pa.

16. The ascent is also called rising, tension and height. The descent is also called fall, looseness and depth. This series of notes is called scale.

17. Equality is called a series of notes which move neither higher or lower and which are chanted on the same syllables, like: papapa, dididi or zozozo.

18. To design as example, in the form of a scale, the series of ascending and descending notes, we propose the following diagram. We start by saying pa, from there we go to the bou, from the bou to the ga, from the ga to the di, from the di to the ke, from the ke to the zo, from the zo to the ne and from the ne to the Pa. Then, from the Pa we return to the ne, from the ne to the zo and so on until we arrive to the first pa.

The diatonic scale on the diapason system, on which the beginners are taught the quantity of melody.

T H E M A R T Y R I A E	π' 9		Pa	T H E N O T E S
	γ' 22	12	ne	
	z' 2	7	zo	
	μ' 9	9	ke	
	α' 4	12	di	
	Γ' 22	12	ga	
	ϵ' 2	7	bou	
	π' 9	9	pa	

19. In order to sing this scale correctly, the beginner should be instructed by a Greek musician because a foreign musician, due to the practice in his nation, pronounces the notes differently, without using the intervals of the notes as we do.

20. The letter a of the syllable pa means that the pa is the first note of the scale. The letter b of the

syllable bou means that the bou is the second note of the scale; and so on for the remaining notes.

21. The Europeans represent their scale, which they also call gamma, with the following syllables:

la, si, ut, re, mi, fa, sol, la.

They start with the ut pronouncing some of the notes as we do and some differently.¹ We might suppose either that the pa corresponds to the la, the bou to the si and so on respectively, or that the pa corresponds to the re, the bou to the mi etc. Considering the instruments and most of the practice, the first supposition appears to be more probable.^b

22. When ascent above the seven notes is asked for, then we sing more ascending notes represented, however, with the same syllables, naming the eighth note Pa, the ninth Bou and so on, Ga, Di, Ke. . .

23. When descent below the seven notes is asked for, then we sing more descending notes represented, however, with the same syllables, naming the eighth lower note pa, the ninth ne and so on, zo, ke, di, ga, bou, pa.

24. The ascent and the descent are called continuous when the series is compiled of notes that succeed each other directly, such as pa bou ga di or pa ne zo ke.

25. The ascent and the descent are called discontinuous when the series is compiled of notes that succeed each other indirectly whereas the in between notes are silenced, such as pa di ne or di bou zo.

26. The discontinuous ascent and descent are multifarious, but the continuous are of one kind. Therefore,

¹We elucidate the difference of the notes in the third book. Gui got the seven syllables of the notes from the acrostic of a hymn referring to St. John the Baptist. He applied them to music in the year 1204 A.D., that is 268 years after John Damascenos. It is said, however, that Gui used the six syllables only and that the seventh was added later. These were commonly accepted by all European musicians, and with various additions made for the better, are still in use today.

the quantity of the distance between two given continuous notes is 1, whereas the quantity of the distance between two given discontinuous notes might be 2, 3 or 4 etc. The quantity of the discontinuous ascent and descent is calculated on the scale in the following manner. When the quantity of the distance of the given notes pa and di is asked for, we observe how many notes pa is away from di on the scale and find three: pa, bou ga di. The pa-di quantity, therefore, equals three. In the same way we find pa-zo to equal five; and all the rest are examined in like manner. The only note that does not count in the calculation is the one from which the others are measured.

CHAPTER III

Concerning the neumes of the notes^a

27. The neumes that represent the notes of a written chant, that is the neumes by which the quantity of a melody is notated, are ten. They are written and named as follows:

Ison	⌒	0	Neutral
Oligon	—	a	Ascending
Petaste	⌒	a	
Kentemata	“	a	
Kentema	‘	b	
Hypsele	⌒	d	
Apostrophos	>	a	Descending
Hyporrhoe	s	2	
Elaphron	⌒	b	
Chamele	⌒	d	

28. They are divided into ascending, descending and neutral. The neutral is one, the ison. The ascending are five, the oligon, the petaste, the kentemata, the kentema and the hypsele. The descending are four, the apostrophos, the hyporrhoe, the elaphron and the chamele.

29. The neumes in themselves designate the notes indefinitely since every neume might stand for every one of the notes. When related to the previous neume, however, they designate the notes definitely as becomes clear with the following.

30. The ison reveals neither ascent or descent, but equality; this is what the zero after it shows. It designates the note of the previous neume.

31. The oligon, the petaste and the kentemata reveal the first note ascending from the previous and the apostrophos reveals the first note descending from the previous. This is what the a after them shows.

32. The hyporrhoe reveals two consecutive notes descending from the previous. This is what the 2 after it shows.

33. The kentema reveals the second discontinuously ascending note. The elaphron reveals the second note descending discontinuously from the previous. This is what the bystanding b shows.

34. The hypsele reveals the fourth discontinuously ascending note and the chamele reveals the fourth discontinuously descending note. This is what the bystanding d shows.

35. To sum up, when writing a melody, for every equality we use the ison, for every continuous ascent the oligon, the kentemata and the petaste and for every continuous descent, the apostrophos and the hyporrhoe.


36. The discontinuous ascent and descent are notated with the same neumes. Since, however, they are done in many ways, the neumes are not used simple, but composite because composition, when applied in certain ways, has the power to augment the quantity of the neumes.


CHAPTER IV

Concerning the composition of the neumes^a

37. Composition of the neumes is to interweave them befittingly, so that they will represent the various quantities of the notes definitely (26). Because, as the grammaticians make the syllables by composing the letters in different ways, so do the musicians the compositions, by which the written chant is notated completely, by compiling the neumes in various but definite ways.

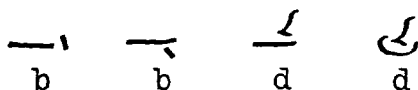
38. Some of the ten neumes can be written non-composed, that is by themselves and others cannot. Non-composed can stand the ison, the oligon, the petaste, the apostrophos and the chamele. The remaining neumes cannot be written by themselves alone and, when composed with the others, they augment their quantity, depending on the position they happen to be. The kentema, for example, when composed with the oligon, reveals the second discontinuously ascending note, if it stands after it thus —\, but when it stands thus — it reveals the third discontinuously ascending note.

39. The oligon and the petaste are subordinated by all the neumes except the kentemata. The subordinated neume loses its quantity and then it is the quantity of the subordinating neume that counts. For example, when the hypsele is placed over the oligon thus —, the quantity of the oligon gets lost and the quantity calculated is that of the hypsele.

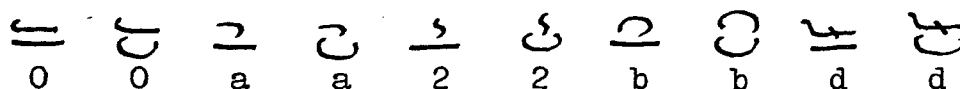
40. When the elaphron subordinates the apostrophos thus —, the two notes are pronounced continuously and it is assumed that the first bears a gorgon. The

elaphron thus, loses its ability to descend discontinuously.

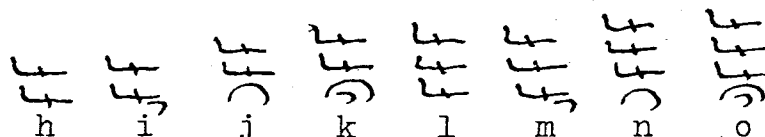
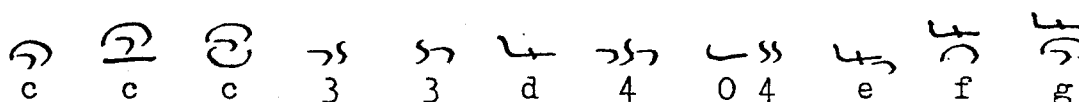
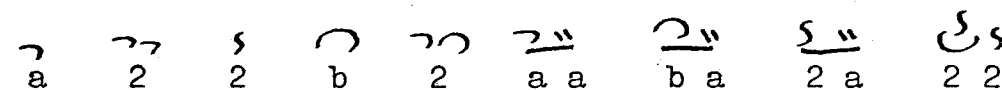
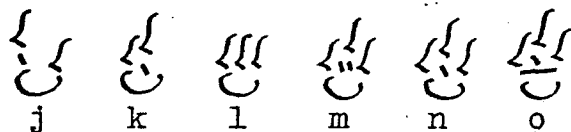
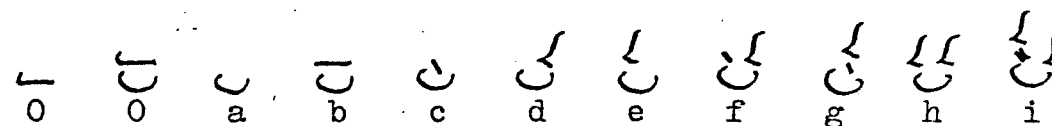
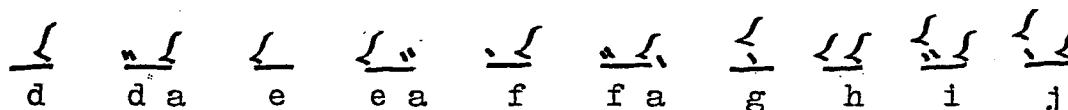
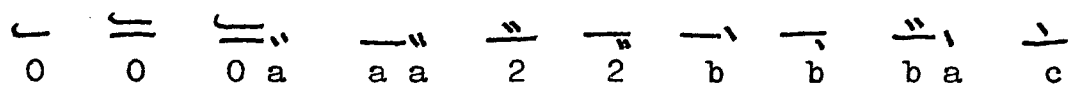
41. The oligon and the petaste are subordinated, in the positions shown below, to the kentema and the hypsele.



They are subordinated to the ison and all the descending neumes, when placed over them thus:



42. The following table shows how composition augments by one to fifteen units the quantity of the neumes. It should be known that the letters reveal discontinuity and the numbers continuity.



CHAPTER V

Concerning the parallage of the diatonic genus^a

43. Parallage is to apply the syllables of the notes on the notated neumes, so that we might chant the notes by looking at the composed neumes. Here it should be noted that the further the polysyllable notes^b get away from the chant, the more do the monosyllable ones touch it. When one learns to sing the parallage of a musical work correctly, it suffices to change the syllables of the notes by saying those of the words, in order to be singing it as a chant.

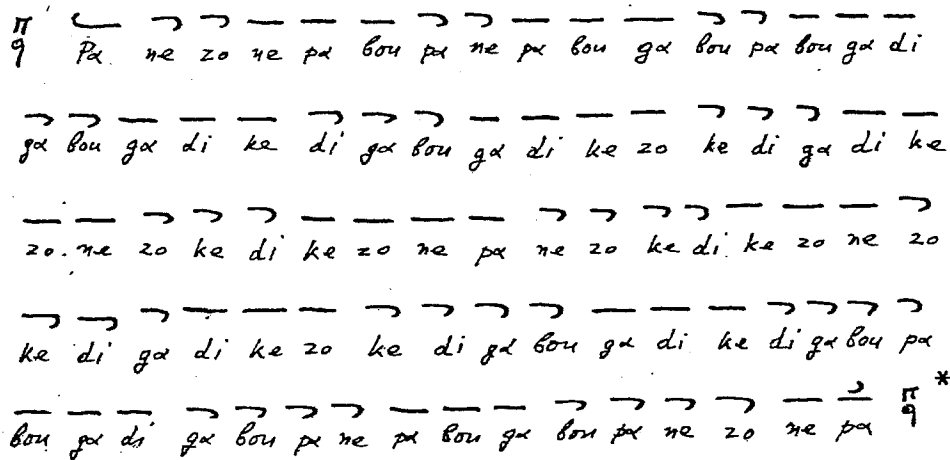
44. For the act of the parallage you should have in mind that in every chant, before anything else, stands the martyria which shows which note becomes the start, so as to determine the following notes of the melody which are represented with the neumes. After the martyria stand the neumes of the notes indicating equality, ascent or descent (the latter two either continuous or discontinuous). No matter what they indicate, you should observe the quantity that the neumes have in themselves or by composition and name the appropriate note. Let us elucidate this in act as well; first with continuity.¹

45. In the parallage of the diatonic genus stands the martyria q that shows that the note pa becomes the start. Since the following ison indicates equality, the note pa should be pronounced on the ison. Then apply the two descending notes ne and zo on the two apostrophoi. Next apply the three ascending notes ne, pa and bou on

¹Later we speak more extensively about the martyriae.

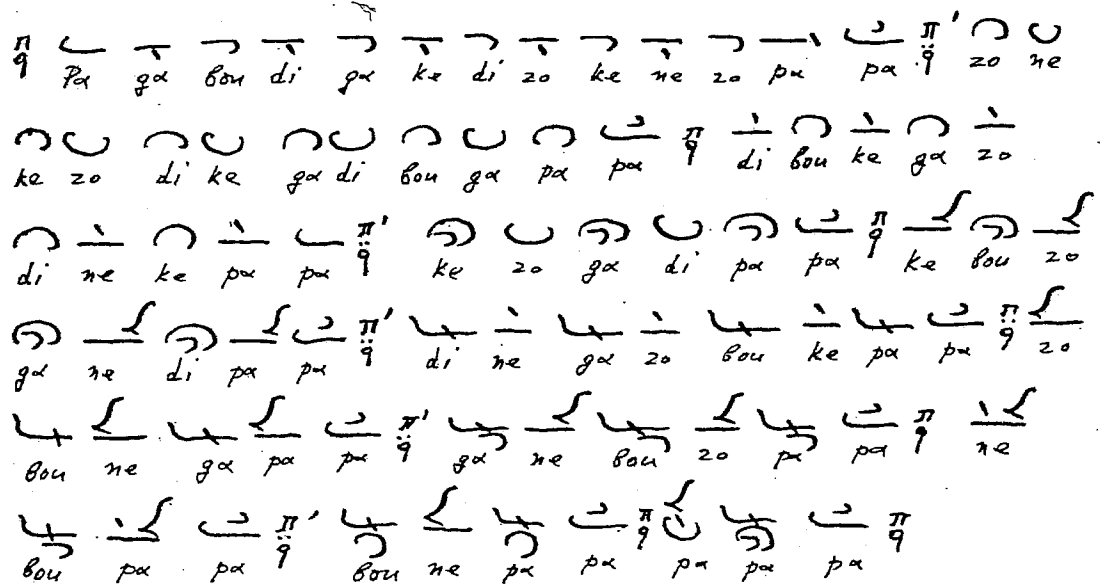
the three oligas. On the two other apostrophoi apply the two descending notes pa and ne. Continue in like manner until you arrive to the last note pa.

The parallage of the diatonic genus with continuity.



46. Now with discontinuity. After naming the ison pa, say ga for the kentema and bou for the apostrophos. Then, say di for the other kentema and ga for the apostrophos. And according to the concurring quantities, observe and realize the remaining until the end.

The parallage of the diatonic genus with discontinuity.



*All music notated in the New Method is transcribed below, Appendix I, p. 258.

47. The notes indicated by the composition of neumes might be a second, third, fourth etc.apart. In every case, one should find the natural pitch of the notes and pronounce it discontinuously. The pronunciation of discontinuous notes requires much attention and sufficient training. The student must be able and tell fast which note is a fourth, fifth, etc. apart from the given note and then he should pronounce it without difficulty. He will achieve this through continuous exercise and years of training.

48. Usually, teachers instruct the Parallage to their students by writing the syllables of the notes below the neumes. This is done to facilitate them but it does not lead to perfect knowledge. What teachers should do is to erase the syllables of the notes, leaving the neumes alone. This way the students will get the habit of looking at the neumes and pronouncing the notes.

49. When a student is given any chant to study, he should first learn to sing its parallage faultlessly and then, instead of the syllables of the notes to say the words of the text.

CHAPTER VI

Concerning the intervals

50. Interval is this which is comprised between two notes dissimilar in height and lowness.¹ This implies that between the notes di and ke there is height when sung di-ke but lowness when sung ke-di. These are given empirically as the different lengths of a string. The string segment that is pressed on the pandouris² to sound the di is longer than the one pressed to sound the ke. So, if you imagine that from the string's longer segment--the one that emits the di--is subtracted the smaller segment--the one that emits the ke--the remainder will be the interval of the two notes di-ke.

51. In the continuous series of the eight notes of the

¹This definition is by Eucleides. Aristoxenos defines the interval thus: "Interval is that which is delimited by two notes which have not the same tension." Aristides defines it thus: "Interval is magnitude of sound circumscribed by two notes."^a The philosopher Gaudentius defines it thus: "Interval is that which is contained between two notes."

²Among the melodic instruments the one that appears easier for teaching and the one found to be the most clarifying for the learning of the tones, the semitones and, simply, of all the intervals, is the pandouris. This is also called pandoura and pandouros and, by us, tamboura or tambour. It has two parts, the body and the neck. On the neck the tones and semitones can be fretted. It is three-stringed and the first string gives the buzz of the di, the second gives the ga below it and the third the pa below it. The strings are situated over it without contacting it and are stretched or loosened with the pegs. When pressed with the fingers of the left hand upon the frets of the tones and struck with the right hand with a plectrum, they emit all the notes.^b

diatonic scale

pa bou ga di ke zo ne Pa,

the musicians distinguish seven intervals: pa-bou, bou-ga, ga-di, di-ke, ke-zo, zo-ne and ne-Pa, all of which are called tones by us, but the Ancient Greeks called five of them tones and two, the zo-ne and the bou-ga, leimmata. The Europeans call two, the ke-zo and the bou-ga semitones and the remaining five, tones.

52. Tone signifies two things: the place on a string from where a note is emitted and one of the seven intervals of the diatonic scale. As regards its first significance, it is defined by Eucleides thus: Tone is a non-dimensional space of sound susceptible of a system.^c As regards its second significance, it is distinguished by us in three kinds, major tone, minor tone and minimum tone.

53. The major tone's ratio to the minor is as 12 to 9. Its ratio to the minimum tone is as 12 to 7. The minor tone's ratio to the major tone, therefore, is as 9 to 12 and to the minimum tone as 9 to 7. It follows that the minimum tone's ratio to the major tone is as 7 to 12 and to the minor as 7 to 9. If the interval of a major tone is supposedly equal to twelve lines, the interval of a minor tone will be found equal to nine lines and that of a minimum tone equal to seven lines.

54. Among the intervals of the diatonic scale pa bou ga di ke zo ne Pa, the pa-bou is a minor tone, the bou-ga a minimum tone, the ga-di a major tone, the di-ke a major tone and the ne-Pa a major tone. The major tones, therefore, are three, ga-di, di-ke and ne-Pa; the minor two, pa-bou and ke-zo; and the minimum two, bou-ga and zo-ne.

CHAPTER VII

Concerning the symphony

55. Symphony is, according to Eucleides, the simultaneous attack and blending of two notes which differ in height and lowness.^a This means that there is symphony when two notes attacked at the same time make a union, in spite of the fact that one is higher than the other. In other words, although they are distinguished from each other when they strike the sense of hearing, they, nevertheless, produce a feeling acceptable in itself and agreeable, a consonance.

56. Observing the outcome of two notes attacked at the same time, the musicians distinguish their combinations into four kinds:¹ the homophonon, the paraphonon and the diaphonon. Two notes that do not differ from each other in height and lowness when simultaneously pronounced, are called homophonoi, like pa, pa. Two notes are called symphonoi when they are pronounced at the same time and the chanting of the lower is the same with that of the higher; when that is, the pronunciation of the two notes implies in a way their unity and blending,² like pa, Pa. Two notes are called diaphonoi when

¹One note, therefore, cannot make a symphony. According to Aristoxenos there are four symphonies: the diatessaron, ne ga, the diapente, ne di, the diapason, ne Ne and every symphonic interval added to the diapason.

²Thus says Gaudentius the philosopher. Nicomachos the Pythagorean says thus: "In order to be symphonous, the notes should, when played, constitute for the sense of hearing kind of one note, neither height or lowness being excessive and prominent. On the contrary, it should

they are pronounced at the same time, but the chanting of the lower does not appear to be the same with that of the higher nor does the chanting of the higher appear the same with that of the lower; in other words, when simultaneously pronounced, they do not seem to blend with each other, like pa, bou. Paraphonoi are called two notes which are in the midway between the symphonon and the diaphonon, but when played they seem to be symphonoi, like ne, bou?

57. From the outcome of the note combinations we know today of four symphonies:

the diatrion	bou di	19
the diatessaron	ne ga	28
the diapente	ne di	40
and the diapason	ne Ne3	68

be as if such a blending occurs in which no one of the blended elements predominates over the other by making its intensity prominent because of excess or want. Because if the sense of hearing perceives the lower or the higher note more, then, this is not a symphony."

"In the case of symphonies, regardless of whether the strings are played together or alternately, the sense of hearing accepts the consonance with pleasure." Plutarch.

³In early times the diatrion was not classified among the symphonies. To the other symphonies were given the following numerical ratios, as Gaudentius reports: "The discovered numerical ratios of the symphonies, tested precisely in all possible ways, are: of the diatessaron, epitriton (one plus one third) as is 24 to 18; of the diapente, hemiolon (one plus one second) as is 24 to 16; of the diapason, double as is 24 to 12; of the diapason plus the diatessaron, diplasiepitriton (two plus two thirds) as is 24 to 9; of the diapason plus the diapente, triple as is 24 to 8; of the bisdiapason, quadruple as is 24 to 6. It is said that it was Pythagoras who originated these discoveries."

The following are reported by Manouel Bryennyos: "Those among the notes that are observed to have double and quadruple ratios are indeed generally called symphonous, but specifically they are called antiphonous. The ones with hemiolic and triple ratios are in general called symphonous also, but specifically they are called paraphonous. Those with epitriton and double epitriton ratios are called both generally and specifically symphonous.

58. These four symphonies are verified with the following trial: When the low string of any sufficiently long four-stringed instrument is plucked, we hear its buzz,⁴ its octave and the other higher notes in this order:

1	1/2	1/3	1/4	1/5	1/6	1/7
ga	Ga	ne	Ga	ke	Ne	bou?

These notes that are distinguished on the thick and long string exist on every other string as well, but because of the symphony they are not easily perceived.

⁴According to Souidas, buzz is the sound of the bees. A deep note though, was also called buzz. Indeed, the chant accomplished in deep notes is called buzzing chant. Gerasenos Nicomachos moreover, makes-up the word "buzzier". "On either extreme of the diapason," he says, "the sound becomes emittable with difficulty, appearing like hiccup at the high extreme and like coughing at the 'buzzier' of the extremes." (see also 99).

CHAPTER VIII

Concerning the diapason system

59. System, according to Eucleides, is that which is comprised in more than one intervals.^a There are three systems, the octachord, the pentachord and the tetra-chord. The octachord, also called diapason, comprises seven intervals all of which are considered tones by us. The Ancient Greeks though, considered five of them tones and the two, leimmata. These seven intervals are delimited by eight notes:

pa bou ga di ke zo ne Pa.

60. When the seven intervals of the diapason are redoubled:

pa bou ga di ke zo ne Pa Bou Ga Di Ke Zo Ne Pa,
the first seven intervals belong to the diapason and the seven next to the bisdiapason. When they are triplicated, the third intervals are said to belong to the trisdiapason.

61. Pa is the end of the diapason and the start of the bisdiapason, where it holds the position that the pa holds in the diapason when the interval pa-bou is measured. The Pa, on the other hand, is required in the diapason when the interval ne-Pa is measured.

62. Because of the symphonies that the notes of the diapason form with the notes of the bisdiapason and the trisdiapason and, moreover, because of the similarity of the intervals, we represent with the same syllables the notes of the diapason, the bisdiapason, the trisdiapason etc. The first note of the diapason, therefore, is symphonous with the first note of the bisdia-

pason and the trisdiapason, the second note is sympho-
nous with their seconds, the third with their thirds
and so on.

63. The intervals of the notes of the diapason have
to each other the ratios expressed (51 and 53). The
tones of the diapason, therefore, are fretted on the
canon or the pandouris in the following way.¹

As the string is suspended on two bridges--one on
the neck, the other on the body--write Di on the for-
mer and O on the latter, divide into nine parts the in-
terval Di-O, make the fret on the first part closer to
Di and there write the ke. Then divide into twelve
parts the interval from the ke to the O and making the
fret in the same way, write the zo. Then divide into
four the interval Di-O and making the fret on the first
part after the Di, write the ne.² After, divide into
nine parts the interval ne-O and making the fret in the

¹Eucleides calls canon the instrument that today
we call monochord. This was just one string stretched
upon a wooden board, whose length was divided in such
a way that the intervals were easily demonstrated.

Claudius Ptolemaeos and Manouel Bryennyos speak
extensively about the "section of the canon" and its
divisions for the three genera.

²Here below is proved that the intervals di-ke,
ke-zo and zo-ne have to each other the ratios such as
12, 9, 7:

di-ke : ke-zo :: $\frac{1}{9}$: $\frac{1}{12}$, this is $\frac{4}{36}$: $\frac{3}{36}$. Conse-
quently, $\frac{4}{36}$: 12 :: $\frac{3}{36}$: x, and 4 : 12 . 36 :: 3 : 36x.
Therefore, 4. 36x = 12.36.3 and x = 9.

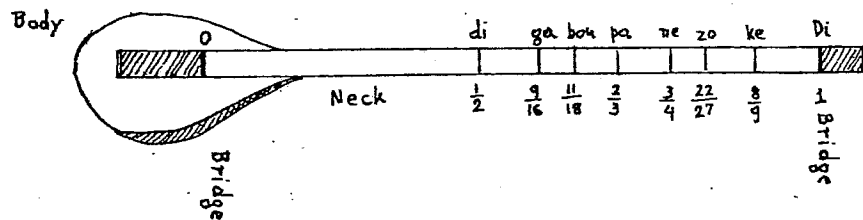
If it is assumed that the entire string equals 27,
the fraction $\frac{27}{27}$, which is 1, will correspond to the
Di; the $\frac{24}{27}$, which is $\frac{8}{9}$, will correspond to the ke; the
 $\frac{22}{27}$ to the zo and the $\frac{3}{4}$ to the ne. Therefore, the $\frac{7}{108}$
will correspond to the interval zo-ne, because $\frac{1}{4} - \frac{5}{27} =$

same way, write the pa. Next, divide into twelve parts the interval pa-0 and making the fret in the same way, write the bou. Finally, divide into two parts the interval Di-0 and after you have made the fret and written the di, divide into eight the interval di-Di and making the fret, write the ga. Thus you have fretted on the pandouris the tones of the diapason.

64. The intervals of the bisdiapason's tones now, are fretted on the canon by taking half the intervals of the diapason's tones. This means that the tone di-ke of the bisdiapason requires an interval equal to the half of the tone di-ke of the diapason and the tone ke-zo of the bisdiapason requires an interval equal to the half of the tone ke-zo of the diapason; the same holds for the remaining intervals. The intervals of the trisdiapason's tones then, are fretted by taking half the intervals of the bisdiapason's tones and those of the fourth diapason are fretted in the analogous way.

65. The ratios of the various lengths of a string--where the frets are done and from which each note is emitted--to the entire string are expressed numerically thus:

1	8/9	22/27	3/4	2/3	11/18	9/16	1/2
Di	ke	zo	ne	pa	bou	ga	di



$$\frac{27}{108} - \frac{20}{108} = \frac{7}{108} . \text{ Whence, since } di-ke : zo-ne :: \frac{1}{9} : \frac{7}{108},$$

$$\text{then } \frac{1}{9} ; 12 :: \frac{7}{12.9} : x . \text{ Therefore } \frac{1}{9} x = \frac{12.7}{12.9} = \frac{7}{9} \text{ and}$$

$$x = \frac{7.9}{9.1} = \frac{63}{9} = 7 .$$

CHAPTER IX

Concerning the wheel (trochos)

66. The pentachord, also called wheel, contains four intervals that we regard tones. The Ancient Greeks regarded three of them tones and one leimma. The four intervals are delimited by five notes; according to us pa bou ga di and according to the Ancient Greeks te ta tē tō Te.

The early church musicians represented these four intervals at the ascent with the four words annanes, neanes, nana, agia¹ and at the descent with the following words which are nearly similar, aanes, necheanes, aneanes, neagie.

67. Church musicians call wheel a method with which they ascend and descend the intervals of the pentachord diatonically with the eight words or polysyllable notes

¹We are precisely informed about the polysyllable notes from the parallage of the Maistor Coucouzeles. About the notes te ta tē tō speaks most extensively Aristides. He also explains the choice of the vowels e, a, ē, ō and the preference of t to all the other consonants.²

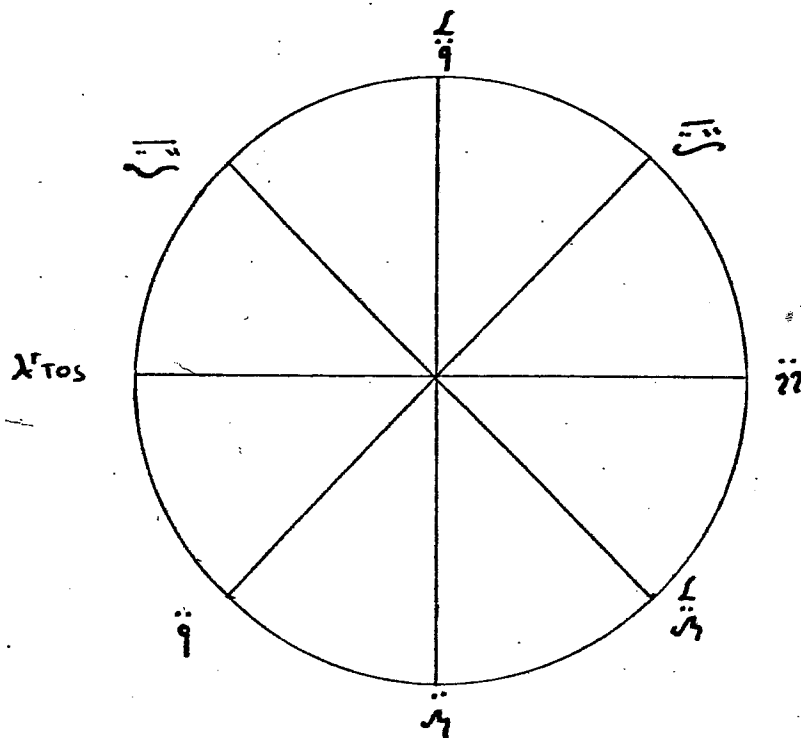
The annanes derives from ἀνα ἄνες, that is, ἀναξ ἄφες which means "King let"; the neanes from ναι ἄνες, the nana from ἀνα ἄνα the agia from ἄγιε. This altogether being ἀναξ ἄφες, ναι ἄφες ἀναξ ἄναξ ἄγιε, is a pray to God.

Constantin Porphyrogennetos says that the nana means θεε θεε (God, God) and the agia σωσον δὴ (do save). He further makes a composite word out of the two, nanaia.

The Arabs have as notes the following words: tanini, tanini, vakya, tanini, tanini, vakya, which have much similarity with ours. Therefore, either they have derived their notes from ours or we from theirs.

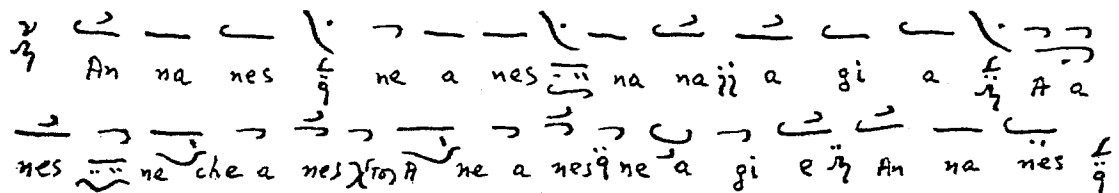
mentioned.²

68. The wheel is constructed if in a given circle four diameters intersect each other and on the end of one of them is written the $\frac{\zeta}{\eta}$, of the next the $\frac{\xi}{\eta}$, of the following the $\eta\eta$, of the fourth the $\frac{\zeta}{\eta}$ and then on the opposite end of the first is written the $\frac{\zeta}{\eta}$, of the second the η , of the third the $\lambda\tau\omicron\varsigma$ and of the fourth the $\frac{\xi}{\eta}$.



²The wheel under discussion is illustrated in all the old Anastasimataria, as it was taught to the beginners before everything else and on it they learned the ascent and descent of the notes. Besides, most of the chants of ecclesiastical music were on the wheel and it was upon it that the eight echoi were defined.

Here now is how the melody of these notes is written.³



69. We sing these notes on the wheel, starting on the $\frac{4}{q}$ and pronouncing it annanes with the melody represented by its neumes. Then, coming to the $\frac{4}{q}$, we pronounce it neanes with its melody. Then coming to the $\frac{4}{q}$, we pronounce it nana with its melody. Next, coming to the $\frac{4}{q}$, we pronounce it agia with its melody. Turning then towards the other end, we come upon the $\frac{4}{q}$ which we pronounce aanes with its melody. Then, coming to the $\frac{4}{q}$, we pronounce it necheanes with its melody. Then, going to the $\frac{4}{q}$, we pronounce it aneanes with its melody. Arriving at the $\frac{4}{q}$, we pronounce it neagie with its melody. From there, turning towards the other end, we come upon the $\frac{4}{q}$ which we pronounce annanes as said before.

70. This way, however, we sing four ascending notes and four descending ones. If we want though, to ascend further, then, when coming at the $\frac{4}{q}$, we do not turn to the $\frac{4}{q}$, but to the $\frac{4}{q}$ and go on this way. If we want

³In the parallage we represent the monosyllable notes with one neume and one neume announces one note only. The polysyllable notes, however, are not considered as having one height or one lowness--in the way that, according to our definition (3), each note is produced by a single sound attack--byt many. Consequently, they are not written with one neume but with many. For this reason the monosyllable notes turned out to be more useful than the polysyllable ones to the beginners, who must be taught and learn the notes in such a way that they will get impressed into their imagination like an unshaken foundation. Only after they are sufficiently trained in the monosyllable notes, should the beginners be taught the polysyllable ones. These are useful--besides for reasons about which we shall speak later--in order to preserve the Greek pronunciation of the monosyllable notes and not to confuse it with the pronunciation of the Europeans. Because the pronunciation of our monosyllable notes becomes more permanently possessed if it is linked with that of the polysyllable ones.

to descend more, then when arriving on the $\dot{\text{A}}$, we do not turn to the $\dot{\text{q}}$, but to the $\overline{\text{A}}$ and go on this way. If we want to ascend or descend less than four notes, then wherever we happen to be, we turn to the opposite end.

71. If I want to ascend in the wheel, then from the $\dot{\text{q}}$ or the $\dot{\text{q}}$ I go to the $\overline{\text{A}}$, from the $\overline{\text{A}}$ or the $\chi\tau\omicron\varsigma$ to the $\dot{\text{A}}$, from the $\dot{\text{A}}$ or the $\overline{\text{A}}$ to the $\dot{\text{A}}$ and from the $\dot{\text{A}}$ or the $\dot{\text{A}}$ to the $\dot{\text{q}}$. If I want to descend in the wheel, then, from the $\dot{\text{A}}$ or the $\overline{\text{A}}$ I go to the $\chi\tau\omicron\varsigma$, from the $\dot{\text{A}}$ or the $\dot{\text{A}}$ to the $\overline{\text{A}}$, from the $\dot{\text{q}}$ or the $\dot{\text{q}}$ to the $\dot{\text{A}}$ and from the $\overline{\text{A}}$ or the $\chi\tau\omicron\varsigma$ to the $\dot{\text{q}}$.

72. Which of these eight notes of the wheel has the priority? Which has the second place, bound to take the start from the first? Well, generally speaking, no one, because no one of these stands without interval, which implies another note or tone. Specifically speaking though, all of them, because each one of them must become first as well as second etc, depending on the need.

73. The pa is said annanes in ascent and aneanes in descent; the bou in ascent is said neanes, in descent necheanes; the ga nana in ascent, aanes in descent; the di agia in ascent, neagie in descent etc, as they appear in this plate.

ta	fa	$\overline{\text{A}}$	neanes			Zo	$\overline{\text{A}}$
te	mi	$\dot{\text{q}}$	annanes	aneanes	$\dot{\text{q}}$	ke	$\dot{\text{q}}$
to	re	$\dot{\text{A}}$	agia	neagie	$\dot{\text{A}}$	di	$\dot{\text{A}}$
te	ut	$\dot{\text{A}}$	nana	aanes	$\overline{\text{A}}$	ga	$\dot{\text{A}}$
ta	si	$\overline{\text{A}}$	neanes	necheanes	$\chi\tau\omicron\varsigma$	bou	$\chi\tau\omicron\varsigma$
te	la	$\dot{\text{q}}$	annanes	aneanes	$\dot{\text{q}}$	pa	$\dot{\text{q}}$
to	sol	$\dot{\text{A}}$	agia	neagie	$\dot{\text{A}}$	ne	$\dot{\text{A}}$
te	fa			aanes	$\overline{\text{A}}$	zo	$\overline{\text{A}}$

74. The annanes ascends a major tone, the neanes is a minor tone higher from the annanes, the nana is a minimum tone higher from the neanes and the agia is a major tone higher from the nana. The tones of the wheel now, are fretted on the canon or the pandouris this way. As the string is suspended on two bridges, one on the neck and the other on the body, write $\dot{\lambda}$ on the former and 0 on the latter. Divide into nine parts the interval $\dot{\lambda}$ -0, make the fret on the first part closer to $\dot{\lambda}$ and write the $\frac{1}{9}$. Then divide the interval $\frac{1}{9}$ -0 into twelve parts and making the fret in the same way, write the $\frac{1}{12}$. Next, divide into four parts the interval $\dot{\lambda}$ -0, the entire length of the string and, making the fret in the same way, write the $\frac{1}{4}$. Next to this, divide the same interval $\dot{\lambda}$ -0 into three and making the fret in the same way, write the $\frac{1}{3}$. Thus you have the tones of the wheel fretted on the pandouris.

75. If you want to have the tones of the second and third pentachords as well fretted on the pandouris, then, substitute the $\dot{\lambda}$ by the $\frac{1}{2}$ and repeat the above; and so on.

76. The ratios of the various string lengths--where the frets of the tones are done according the wheel--to the entire string are expressed with numbers thus:

1	8/9	22/27	3/4	2/2
$\dot{\lambda}$	$\frac{1}{9}$	$\frac{1}{12}$	$\frac{1}{4}$	$\frac{1}{3}$

CHAPTER X

Concerning some peculiarities of the notes of the wheel

77. Among the four intervals of the notes of the wheel

q xros ii $\frac{f}{q}$

two--the $ii - \frac{f}{q}$ and the $\frac{f}{q} - q$ --are considered major tones, one--the $q - xros$ --is considered a minor tone and one--the $xros - ii$ --a minimum tone. When we are therefore asked to ascend one or two major tones, we sing the three notes $\frac{f}{q}$ $\frac{f}{q}$ ii (annanes, neagie, aanes) where the $\frac{f}{q}$ indicates one major tone and the ii the second. When we are asked to descend two tones, one major and one minimum, we sing the three notes $\frac{f}{q}$ ii $xros$ (agia, aanes, necheanes) where the ii indicates the major tone and the $xros$ the minimum. When we are asked to descend three tones, a major, a minimum and a minor, then we sing the four notes $\frac{f}{q}$ ii $xros$ q (agia, aanes, necheanes, aneanes) and thus the problem is solved as above. The same, but reversed, are also observed for the ascent.

78. When we are asked to ascend one major tone, we sing the two notes agia, annanes ($\frac{f}{q}$ $\frac{f}{q}$), where the $\frac{f}{q}$ indicates the major tone. When we are asked to ascend three or four consecutive major tones, we sing the $\frac{f}{q}$ and the $\frac{f}{q}$ as follows: agia, annanes, annanes, annanes, annanes, where it is assumed that the first annanes stands as agia to the second and so does the second to the third etc. This way we ascend as many major tones as required.

79. When from a given note, let us say from the agia, we are asked to ascend two tones, a major and a minor, we sing the three notes $\frac{f}{q}$ $\frac{f}{q}$ and \overline{q} , where the $\frac{f}{q}$ gives the major tone and the \overline{q} the minor. When we are asked to

ascend a minor tone, then, supposing that the given one is the annanes, we sing the $\overline{\text{A}}$ with its melody and the problem is solved. If asked to ascend two or three consecutive minor tones, we sing the $\overset{f}{\text{A}}$ and the $\overline{\text{A}}$ as follows: annanes, neanes, neanes, neanes, neanes, where the first neanes is supposedly annanes to the second, that is to say that the syllable ne descends a major tone, the syllable a ascends a major tone and the syllable nes ascends a minor tone. Similarly, the second neanes is supposedly annanes to the third and so on. Thus, we are able to ascend as many minor tones as we are asked to.

80. When we are asked to ascend three tones--a major, a minor and a minimum--from a given note, we sing the four notes $\overset{f}{\text{A}}$ $\overset{f}{\text{A}}$ $\overline{\text{A}}$ and ?? and thus solve the problem. In the case of one minimum tone alone, when asked to ascend it, assuming that $\overline{\text{A}}$ is the given note, we sing the ?? with its melody. When asked to descend it on the other hand, assuming ?? to be the given note, we sing the $\chi\tau\omicron\varsigma$ with its melody and so show the minimum tone. If we are asked to ascend two or three consecutive minimum tones, we sing the $\overline{\text{A}}$ and the ?? as neanes, nana, nana, nana, where the first nana is supposedly neanes to the second and so is the second to the third.

Four intervals are observed in the wheel (60).

When these are redoubled or triplicated in this manner

$\overset{f}{\text{A}}$ $\overline{\text{A}}$?? $\overset{f}{\text{A}}$, $\overset{f}{\text{A}}$ $\overline{\text{A}}$?? $\overset{f}{\text{A}}$, $\overset{f}{\text{A}}$ $\overline{\text{A}}$?? $\overset{f}{\text{A}}$, $\overset{f}{\text{A}}$,

then the first $\overset{f}{\text{A}}$ itself, does not represent an interval with any fore-standing note; it becomes though representative of an interval with the $\overline{\text{A}}$. The second $\overset{f}{\text{A}}$ is the end of the first pentachord and the beginning of the second. This is representative of both the interval from the previous $\overset{f}{\text{A}}$ to itself and the one from itself to the $\overline{\text{A}}$. The peculiarities of this second $\overset{f}{\text{A}}$ have the third and fourth $\overset{f}{\text{A}}$ as well.

81. No matter how many successive pentachords we deal with, because of the diapente symphony (57) and of the similarity of the intervals in the pentachords, we re-













present the notes of each system with always the same words. The first note of the first pentachord is symphonous with the first notes of the second, third and fourth pentachords; the same applies to the second notes etc. Therefore, although in the diapason system it is the eighth and fifteenth notes that are symphonous with the first note (62), in the wheel it is the fifth, ninth etc. notes that are symphonous with the first.

82. When the ᾠ is the mese, proslambanomenos in the wheel system will be the necheanes indicated with the martyria ᾠ , whereas in the diapason proslambanomenos will be the ke indicated with the martyria ᾠ . In this case, one note receives two martyriae, the ᾠ and the ᾠ . These two martyriae were combined into one, the ᾠ , which is used when one descends from the ᾠ as if from the ᾠ , that is as if from the nana.














83. When the ᾠ is the mese, then proslambanomenos in the wheel will be the aneanes indicated with the martyria ᾠ , whereas in the diapason proslambanomenos will be the di, indicated with the martyria ᾠ . In this case, these two martyriae were combined into the martyria ᾠ , which is used as the one mentioned above, that is, when one descends from the ᾠ as if from the ᾠ . It is used, in other words, in order that the ᾠ will indicate the melody of the ne-agie.

84. When the ᾠ is proslambanomenos, then, mese in the wheel will be the nana, indicated with the martyria ᾠ , but in the diapason it will be the Ne. In this case, two notes are indicated with the martyria ᾠ . For distinction therefore, the ga is indicated with the martyria ᾠ , whereas the Ne with the martyria ᾠ .

85. When the ᾠ is the proslambanomenos, mese in the wheel will be the agia, but in the diapason the Pa. In order to distinguish the martyria of the di from that of the Pa, we indicate the di with the ᾠ and the Pa with the ᾠ . To sum up, the martyriae of the diatonic genus are twelve:

di ke zo ne pa bou ga Di Ke Zo Ne Pa

86. When a chant descends down to  and ascends up to  and does not exceed these boundaries, it makes no difference whatsoever whether the parallage applied is according the wheel or the diapason system. The distinction must be done though, when the chant descends below the  or ascends above the , because between the notes    , the first interval, when the parallage is done on the wheel, is a major tone, the second a minimum and the third a minor, but when it is done on the diapason system --in which case the martyriae are     --, the first interval is a minimum tone, the second a minor and the third a major. For this reason by the way, the  of the wheel was called barys.

CHAPTER XI

Concerning the triphony

87. The tetrachord, also called triphony,¹ contains three intervals all of which we consider tones, whereas the Ancient Greeks regarded two of them as tones and one as leimma. These three intervals are delimited by the four notes: ne pa bou Ne.

 ♩ ♪ χ^{τος} η̇

88. In ascent the triphony was sung: neagie, annanes, nana, annanes, neanes, nana, annanes and so on, always repeating the same words and omitting the agia; and in descent: nana, necheanes, aneanes, neagie, necheanes, aneanes, neagie and so on, always repeating the same notes and omitting the aanes. In both the ascent and the descent of the triphony, therefore, is omitted a note that represents in the wheel a major tone. One could thus say that in the ascent is missing the annanes and in the descent the neagie.

89. Descending triphony of the η̇ is the ♪, of the χ^{τος} the ♩ (not the barys), of the ♪ the ♩ and of the ♪ the ♩. Ascending triphony of the ♪ is the ♪, of the ♪ the ♪ and so on.

90. In this system it is the fourth, the seventh, the tenth and the thirteenth notes that are symphonous with the first note, the fifth, eighth, eleventh and fourteenth with the second and the sixth, ninth, twelfth and fifteenth with the third.

¹The ecclesiastical musicians call the octachord system heptaphony, the pentachord tetrachord and the tetrachord triphony.

91. When we conjoin the pentachord with the tetrachord in such a way that the last note of the pentachord becomes the first of the tetrachord, we derive the diapason system:

\dot{q} $\lambda^{\tau\sigma\varsigma}$ $\ddot{\eta}$ $\frac{f}{\lambda}$, $\frac{f}{q}$ Ξ $\frac{f}{\ddot{\eta}}$ $\frac{f}{q}$ Ξ $\frac{f}{\ddot{\eta}}$
 pa bou ga di, ke zo ne, Ke Zo Ne.

In the triphony, the fifth note in this series is symphonous with the eighth, the sixth is symphonous with the ninth and the seventh with the tenth. Since however, the ke, zo, ne are symphonous with the Ke, Zo, Ne, it follows that the Ke, Zo, Ne are symphonous with the pa, bou, ga as well. We, therefore, construct the diapason system thus:

\dot{q} $\lambda^{\tau\sigma\varsigma}$ $\ddot{\eta}$ $\frac{f}{\lambda}$, $\frac{f}{q}$ Ξ $\frac{f}{\ddot{\eta}}$ $\frac{f}{q}$ Ξ $\frac{f}{\ddot{\eta}}$
 pa bou ga di, ke zo ne, Pa Bou Ga.

Applying the same on the descent, we get the following:

$\frac{f}{q}$ $\frac{f}{\lambda}$ $\ddot{\eta}$ $\lambda^{\tau\sigma\varsigma}$, \dot{q} λ Ξ , \dot{q} λ Ξ
 ke di ga bou, pa ne zo, Pa Ne Zo.

92. All these were verified by John Plousiadenos. As he found them contributing to many musical aspects, he wrote them down in an instructive treatise that he called The Wheel of John Plousiadenos. This is the source of the most commonly used series of notes indicated with these martyriæ:

\dot{q} λ Ξ , λ \dot{q} $\lambda^{\tau\sigma\varsigma}$ $\ddot{\eta}$ $\frac{f}{\lambda}$, $\frac{f}{q}$
 di ke zo, ne pa bou ga Di Ke
 Ξ $\frac{f}{\ddot{\eta}}$, $\frac{f}{q}$ Ξ $\frac{f}{\ddot{\eta}}$ $\frac{f}{q}$ Ξ $\frac{f}{q}$
 Zo Ne, Pa Bou Ga di ke.

Here, after the neagie in descent, we come across the necheanes and not the aanes, because the Ξ is not the barys and after the nana in ascent, we come across the annanes and not the agia. The entire series is compiled of triphony (\dot{q} to λ), wheel (λ to $\frac{f}{\lambda}$), triphony again ($\frac{f}{q}$ to $\frac{f}{q}$) and wheel ($\frac{f}{q}$ to $\frac{f}{q}$).

93. Between the notes λ , \dot{q} , $\lambda^{\tau\sigma\varsigma}$ and $\ddot{\eta}$ of the tri-

phony, three intervals are observed: a major tone, a minor tone and a minimum tone. These can be fretted on the canon or the pandouris in the following manner. On the neck of the pandouris, there where the bridge is, write the $\tilde{\eta}$ and on its body, there where the other bridge is, write 0. Divide then the interval $\tilde{\eta}$ -0 into nine parts, make a fret on the first part next to the $\tilde{\eta}$ and write the $\tilde{\eta}$. Then divide into twelve parts the interval $\tilde{\eta}$ -0 and, making the fret as before, write the λ^{ros} . Next, divide the entire length of the string, from the $\tilde{\eta}$ to the 0, into four parts and, making the fret as before, write the $\tilde{\eta}$. This way you have fretted on the pandouris the tones of the triphony.

94. If you want to fret on the pandouris the tones of the second and third tetrachords as well, then, substituting the $\tilde{\eta}$ for the $\tilde{\eta}$, repeat the above.

95. The ratios of a string's various lengths--where the frets of the triphony are made--to the entire string are expressed numerically thus:

1	8/9	22/27	2/4
$\tilde{\eta}$	$\tilde{\eta}$	λ^{ros}	$\tilde{\eta}$

96. It becomes obvious that all three systems have the same ratios to their tones, the reason being this: the diapason system is composed of a triphony and a wheel (91). When the diapason starts with the triphony, then up to the point where the triphony reaches, the intervals of the diapason's tones are equated with those of the triphony's, i.e:

ne	pa	bou	ga	di	ke	zo	Ne
ne	pa	bou	Ne.				

When, on the other hand, the diapason starts with the wheel, then the tone-intervals of these two systems are equated up to the point where the wheel reaches, i.e:

pa	bou	ga	di	ke	zo	ne	Pa
pa	bou	ga	di	Pa.			

Since, moreover, the triphony is nothing more but the wheel short of a major tone (88), it follows that all three systems have the same ratios to their tone-intervals.

97. One note itself can be proved to be, in its relationship to the remaining, both higher and lower. Among the notes $\frac{4}{9}$, $\frac{2}{3}$, $\frac{1}{2}$ and $\frac{1}{3}$ for example, the $\frac{4}{9}$ is lower than the $\frac{2}{3}$, the $\frac{1}{2}$ and the $\frac{1}{3}$; the $\frac{2}{3}$ is lower than the $\frac{1}{2}$ and the $\frac{1}{3}$, but higher than the $\frac{4}{9}$; the $\frac{1}{2}$ is lower than the $\frac{1}{3}$, but higher than the $\frac{4}{9}$ and the $\frac{2}{3}$; the $\frac{1}{3}$ is the highest of all.

98. One note itself can be proved to be, under a change of system, both lower and higher than itself. Among the notes $\frac{4}{9}$, $\frac{1}{3}$ and $\frac{2}{3}$ for example, the $\frac{2}{3}$ is found to be low if we descend in the wheel, but high if we descend in the diapason; and the difference is a semitone. The same way, among the notes $\frac{2}{3}$, $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{4}{9}$, if one ascends in the wheel, the interval $\frac{1}{3} - \frac{4}{9}$ is found to be a major tone, but if one ascends in the diapason, the interval $\frac{1}{3} - \frac{4}{9}$ is found to be a minor tone.

99. The sound emitted from the mouth or a string, when other higher tones have not been predetermined, is called buzz. This might stand in the place of every note of any of the systems. In the tetrachord system, if an interval of, let us say, a major, then a minor and then a minimum tone is fretted on the canon, it becomes obvious that the buzz will stand for the note $\frac{1}{3}$, the next sound for the note $\frac{4}{9}$, the next for the $\frac{2}{3}$ and the last for the note $\frac{1}{2}$. If, on the other hand, an interval of a minor, then a minimum and next a major tone is fretted, the buzz will stand for the $\frac{4}{9}$, the note after it for the $\frac{2}{3}$, the next for the $\frac{1}{2}$ and the last for the $\frac{1}{3}$.

100. Some of the notes are called melodic and other prosal. Melodic are called the ones used by chanters and by those who play instruments. Prosal are those used by orators and the ones we speak with.

CHAPTER XII

Concerning the martyriae of the diatonic genus^a

101. The martyriae, as has already become obvious in the foregoing (44, 45, 46), stand as keys to the neumes with which the melody is written. The neumes might stand for every note but they do not indicate in every step which one among the notes they represent. We use the martyriae, therefore, in order to uncover the start of the melody's notes, in other words, in order to make known which note becomes the start from which then, the notes of the melody's quantitative neumes are determined.

102. The martyriae are put at the beginning of every melody, in many places in the middle of it and sometimes at its end. A martyria is written at the beginning of the melody in order that the notes of the succeeding neumes will be determined from the note that it reveals. At the beginning of the parallage, for example, is written the $\overline{\eta}$ indicating the note pa. From this it becomes known that the ison will be pronounced pa, the apostrophos ne, the other apostrophos zo etc.

103. In the middle of the melody the martyria is written both for the reason mentioned and as ascertainment of security. Because, when the chanter comes across a martyria, if he finds the note of the last neume to be the same with that of the martyria, he is ascertained that he was securily chanting and that the writer was securily writing. Otherwise, it was either the chanter himself or the writer that did some error. In the mid of the chant "Κύριε ἐλέησον" of the first echos, for example, lies the martyria $\overline{\eta}$. If the chanter pronoun-

ces ga on the neume before it, he is correct, if not, he is wrong. The same purpose has the martyria when written at the end.

104. Since it appears that the original chants of psalmody were four, the original martyriae were also four:

3 9 λ 22

From these derive all the rest in the following way.

105. From the 3 are created first the martyria of the neagie, that in early times was written \mathfrak{A} \mathfrak{B} or \mathfrak{C} , but we write \mathfrak{D} and represent only the note ne with it; second of the agia, that is of its tetraphony, a fifth higher, which in early times was written \mathfrak{E} but we write \mathfrak{F} and represent the note di with it; then of the ninth above it, that we write \mathfrak{G} and represent the note Pa with it; next, of the twelfth above it, that we write \mathfrak{H} and represent the note Di with it; then, of the note a fourth below the ne, that we write \mathfrak{I} and represent the note di with it; and finally, of the octave below the ne, that we write \mathfrak{J} .

106. From the 9 are created, first the martyria of the aneanes, that in older times was written \mathfrak{K} \mathfrak{L} or \mathfrak{M} but we write \mathfrak{N} and represent only the note pa with it; next, of the annanes, or else, of the fifth above it, which in early times was written \mathfrak{O} but we write \mathfrak{P} and represent the note ke with it; then, the note an octave above it, which we write \mathfrak{Q} and represent the Pa; next, of the twelfth above it, which we write \mathfrak{R} and represent the ke with it; next, of the note a fourth below it, that we write \mathfrak{S} and represent the ke with it; and finally, of the octave below it, written \mathfrak{T} and representing the note pa.

107. From the λ are created, first the martyria of the necheanes, that in early times was written \mathfrak{U} but we write \mathfrak{V} and represent only the note bou with it; next, the martyria of the neanes, that is of the note a fifth

above it, which in early times was written $\overline{\lambda}$ but we write $\overset{z}{\lambda}$ and represent the note zo with it; then, of the octave above it, that we write $\overset{g'}{\lambda}$ and represent the Bou with it; next, of the twelfth above it, that we write $\overset{z''}{\lambda}$ and represent the Zo with it; then again the one of the fourth below it, that we write $\overset{z}{\sim}$ and represent the zo with it; and again the one of the octave below, that we write $\overset{g}{\lambda}$ and by which we represent the bou; and finally, the martyria of the eleventh below it, written $\overset{z}{\sim}$ and indicating the zo, because the \sim having no peculiar chant to itself, is included in the λ .

108. From the $\overset{r}{\lambda}$ are created, first the martyria of the nana written in early times $\overset{r}{\lambda}$, $\overset{r}{\lambda}$ though we write $\overset{r}{\lambda}$ with which we represent only the note ga; then, of the fifth above it, that we write $\overset{v'}{\lambda}$, by which we represent the Ne; next, of the octave above it, that we write $\overset{r'}{\lambda}$ and represent the Ga; and finally, of the octave below it, written $\overset{r}{\lambda}$ and representing the ga.

109. Within the diatonic genus itself, the different systems have different martyriae. For example, the note an octave above the $\overset{\pi}{q}$ is indicated with the martyria $\overset{\pi'}{q}$ when the chant is in the diapason system, but when it is in the wheel, the same note is indicated with the martyria $\overset{\pi'}{\lambda}$, because the $\overset{\pi'}{q}$ requires ascent of a minor tone, though the $\overset{\pi'}{\lambda}$ requires ascent of a major tone. The same is understood for the $\overset{z}{\sim}$ and the $\overset{z}{\lambda}$.

110. Within the diatonic genus itself, the phthorae too alter the martyriae. When the phthora of the nana is put upon the di for example, the martyria of this note becomes $\overset{\Delta}{\lambda}$. The chant is nevertheless, always indicated with the four original martyriae. The consonant letters of the seven syllables of the diapason's notes indicate the distance from the ison. For example, the $\overset{r}{\lambda}$ of the martyria $\overset{\Delta}{\lambda}$ indicates that the chant is nana and the Δ indicates that the interval is a fifth

from the note ne.^b

111. A melody is called netoeides when it expands in the area of high notes. It is called hypatoeides when it expands in the area of the low notes. It is called mesoeides when it expands in the area of the in between notes. Consequently some of the martyriæ are said to be of netoeides melody, some of hypatoeides and some of mesoeides. Here you have two plates containing the martyriæ.

?? Γ	λ β	ρ π	ζ ν
	~ z	q̇ u	Δ ζ
	z'' λ	u' q̇	Δ' ζ
Γ' ??	β' λ	π' q̇	ν' ζ
ν' ??	z' λ	u q̇	Δ ζ
Γ ??	β λ	π q̇	ν ζ
??	λ	ρ	ζ

Octaves below

Fourths below

Twelfths above

Octaves above

Fifths above

First

Original

The Martyriae
of the Netoeides
Melody

The Martyriae
of the Mesoeides
Melody

The Martyriae
of the Hypatoeides
Melody

	zo	z'' λ
	ke	u' q
	λ	Δ' λ
	ga	γ' ??
	bou	θ' λ
λ λ	pa	π' q
??	ne	ν' ??
λ λ	zo	z' λ
λ q	ke	u q
λ λ	di	Δ λ
??	ga	γ? ??
λ' τ os	bou	θ λ
q	pa	π q
λ	ne	ν λ
λ λ	zo	z λ
q	ke	q u
λ	λ	λ Δ
	ga	?? r
	bou	θ θ
	pa	q π
	ne	ν ν
	zo	z z

SECOND BOOK

CHAPTER I

Concerning the quality in melody

112. If the musicians were examining melody only as regards height and lowness, their research would be dealing with the quantity of melody alone.¹ Since, however, they examine melody as regards fast and slow, intense and weak, large and small, smooth and rough and many others as well (when a big stroke or blow falls in the surrounding air and hits it at many parts, a big sound results; when the blow or stroke are small, the sound too is small. When the stroke or blow fall evenly, the sound is smooth; when unevenly, it is rough. When they fall freely, the sound is intense; when they meet obstacles, the sound is weak),² the musicians' observations were expanded and included the quality of melody as well. Quality concerns itself with those occurrences that happen in the air and is perceived by us as time and the modes of generating the notes.

113. Time and the modes of generating the notes are the elements that can explicate the quality of chant. When the notes represented with the neumes are not linked with time-indications, they resemble to the syllables of the grammaticians, which have no sense unless employed in words. So, time is what links the notes

¹"It appeared that the difference between lowness and height is a kind of quantity." Claudius Ptolemaeos, Ch. III, 7.

²See Gerasenos Nicomachos, Book I, 8.

together and brings them to the status of words. The modes of generating the notes distinguish the words from each other, in order that each word will enunciate its particular significance. Because as the "writes, come in", "writes: coming", "writes coming", "rights come in", "rights coming", "right's coming" have all the same sound but the manner of pronunciation, due to the spelling, the punctuation or whatever, makes the distinction, in the same way, the modes of generating the notes distinguish the words of the notes, i.e. the theseis,^a from each other.

114. Time, according to the philosophers, is measurement of an object's motion. While a chant is recited, let us have the foot or the hand of the musician move up and downwards hitting on the knee. Measuring the hand's motion, time is rendered. The time spent from one hit to the next is calculated as one chronos.

115. Each neume revealing one note, spends one chronos. The hyporrhoe which indicates two consecutive notes, spends two chronoi and each of its notes gets one chronos.^b

CHAPTER II

Concerning the hypostaseis

116. Short note is called the one that spends one chronos, though long note is called the one that spends many chronoi. Since it often happens though, one note to spend many chronoi or one chronos to require many notes, certain signs have been used to determine all this. These signs are written below or above the neumes of the notes. It is these signs that were named hypostaseis.

117. It follows that hypostasis is a soundless musical sign which notates the quality of the chant and is written below the note-neumes, that is, it is subscribed to the neumes, though, it might also be superscribed on them. It is, in other words, a sign used by the musicians not to represent the notes, but to discern and perfect the composition of the note-neumes so that they will obtain the power to write the chant as the quality demands.

118. Among the hypostaseis some are in-time (en-chronoi) and some timeless (achronoi). The timeless are modal, they write that is, the modes of generating the notes. The in-time are the following:

Haple .

Clasma ˘

Gorgon ˘

Argon ˘

119. The haple (simple) is written . and is worth one chronos. It becomes dipole (double) .. when two chronoi are required and triple (triple)

when three chronoi are required; it becomes tetraple (quadruple) when four chronoi are required, pentaple (quintuple) when five chronoi are required and hexaple (sextuple) when six chronoi are required. To whichever note the haple is subscribed, this note spends two chronoi, one for its own neume and one for the haple. The haple is subscribed to the hyporrhoe \S and causes delay to its second note. It is also subscribed to the kind of apostrophos that can receive a gorgon $\backslash - ?$ and to the antikenoma $\equiv \rightarrow$. The note of any neume subscribed by the dipple spends three chronoi. The dipple is subscribed to all the neumes except the kentamata, since they never spend more than one chronos. The note of any neume subscribed by the triple, the tetraple, the pentaple and the hexaple spends the analogous chronoi. These signs are subscribed to the same neumes as the dipple. When written apart from the neumes with a bareia, the haple signifies one chronos of silence, the dipple two chronoi of silence, the triple three chronoi of silence etc.

120. The clasma is written \rangle and is worth one chronos. It is put on all the neumes except the hyporrhoe and the kentemata, because the hyporrhoe receives the haple instead of the clasma and the kentemata are never delaying, as said before. The note of the neume which bears the clasma, spends two chronoi and during the delay the voice waves, so to say.

121. The gorgon is written r and is worth half a chronos. When it is required that two notes spend together one chronos, then the gorgon is put on the second neume thus $\backslash \rightarrow \S$. When it is required that three notes together spend one chronos, then it becomes digorgon and is put again on the second neume thus $\rightarrow \S \wedge$. When it is required that four notes together spend one chronos, then it becomes trigorgon and is put on the second neume again, like $\cup \S \wedge$;

and so on.

122. The gorgon is distinguished into three kinds: the half, the whole and the hemiolic. In order to demonstrate this, let us suppose that the chronos spent by the two notes indicated with these two neumes $\text{—} \text{r}$, is 4. When it is required that the oligon spends 3 and the ison 1, then, on the oligon is put the r , $\text{—} \text{r}$. When it is required that the oligon spends 2 and the ison 2, then, the r is put upon the oligon $\text{—} \text{r}$. When it is required that the oligon spends 1 and the ison 3, then, the r is put upon the oligon $\text{—} \text{r}$. The first of these, the r , is called hemigorgon; the second, the r , is called gorgon and the third, the r , trihemigorgon.

123. The digorgon is distinguished into four kinds. When the first note spends half the chronos and the rest two the other half (the second and the third, that is, a quarter each), the digorgon is written $\text{—} \text{r}$. When the first note spends a quarter of the chronos, the second half of it and the third a quarter, it is written $\text{—} \text{r}$. When the first and the second spend a quarter each and the third a half, it is written $\text{—} \text{r}$. When the three notes divide the chronos equally among themselves, each receiving one third of the chronos, then, the number 3 is written after the digorgon thus $\text{—} \text{r}^3$. This means that the chronos is divided into three instead of four.

124. Such distinctions do not apply on the trigorgon, since it is assumed that the chronos is divided into four and that each notes spends a quarter of the chronos. As regards the tetragorgon and the pentagorgon, if they are ever met, their speed does not permit such distinctions to be made.

125. In brief, the gorgon gives to the note of the neume on which it is put, the value mentioned. It deprives the previous note of one quarter of the chronos

--when it is hemigorgon--two quarters--when it is gorgon--and three quarters--when it is trihemigorgon. In the case of the digorgon, the one written r , deprives the previous note of two quarters of the chronos, the one written r or r of three quarters and the one written r^3 of two thirds of the chronos.^a

126. The argon is written γ . It is worth one chronos. It is put upon that kind of oligon under which kente-mata stand $\frac{1}{\text{u}}$ and it requires that the oligon together with the kentemata will spend one chronos and the argon itself one more chronos. A gorgon is also implied in this case, since the two neumes together spend one chronos. When three chronoi are required, the argon is doubled and written γ . When four chronoi are required, it is tripled and written γ .

127. When a neume has both a gorgon and an hapse, like r , then the gorgon acts first and the hapse after. Since this position requires two chronoi, it is realized in two beats. In the first beat comes the note of the ison, spending half the chronos and the note of the apostrophos spends the remainign half up to the second beat. At the second beat the note of this same apostrophos is sustained during the second chronos required for the hapse. The same happens when the neume has a digorgon and a diple thus r . During the first chronos are spent the three notes and during the next two chronoi of the diple, the sound of the second note of the hyporrhoe is sustained.

128. No sign is required to indicate the tempo as long as it is kept the same in the course of a chant. When, however, it changes from fast to slow it is indicated with the X , which asks for double the speed. When it changes from slow to fast it is indicated with the X , which shows that the retardation is redoubled.^b

CHAPTER III

Concerning the timeless hypostaseis^a

129. The timeless hypostaseis, also called modal because they notate the modes of generating the notes instead of time, are seven:

The bareia \
The homalon —
The antikenoma —
The psephiston ~
The heteron ~
The stavros +
The endophonon —

103. Here below are described the modes of recitation that distinguish any note bearing one of the seven hypostaseis: The bareia calls for the note of the neume that lies after it, to be pronounced with certain weight, so that this note's vitality will be distinguished both from the previous and the following notes. The bareia is subscribed to all the signs except the kente-mata.

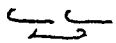




131. The homalon calls for a waving of the voice to occur in the larynx together with certain heightening of the note of the neume to which it is subscribed. It is subscribed to all the neumes except the kente-mata, the petaste and the hyporrhoe.

132. When the antikenoma is subscribed to an oligon which is followed by a descending neume, it calls for the sound to be pronounced with a push. When under the antikenoma is put an huple ~, a dipole ~ or a triple ~ with a descending neume next to it, the sound

is pronounced in a way suspended and unseparated.


The antikenoma is put under all the neumes, except the kentemata. It is put before all of them, except the hyporrhoe.

133. The psephiston calls for a certain power and vitality to be given to the notes of the neumes under which it is subscribed. It is put under the ison and the ascending neumes that stand before descending neumes, except the kentemata.

134. The heteron links ascending with descending neumes, an ison with an ison, as , an oligon with an ison, as  or an apostrophos, an elaphron and a chamele with an ison, as   . The notes are pronounced in a way smoothly and weakly connected.

135. The stavros calls for the sound of the note after whose neume it lies, to be interrupted, so that the sound of the next neume will be taken with a new breath.

136. The endophonon calls for the note of the neume to which it is subscribed, to be pronounced from the nose. When this neume happens to have a time-sign as well, the time is similarly spent. During the delay, that is, the sound comes out through the nose, as in

.

In early times more timeless hypostaseis were used, which did not represent the modes of generating the notes, but a whole melody. We shall speak about these in connection with chant-making.

CHAPTER IV

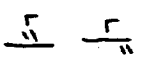

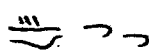
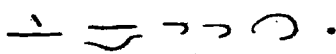
Concerning the differences in the interpretation of the neumes' notes

137. The early ecclesiastical musicians, observing with curious eyes the interpretation of notes, expanded it to include many modes. They considered, therefore, reasonable to represent their chants with as many neumes as many modes of interpretation they were able to discover. Otherwise, as the famous writer of ecclesiastical music Gabriel Hieromonachos believed, the seven neumes (the ison, the oligon, the kentema, the hypsele, the apostrophos, the elaphron and the chamele), were sufficient to represent any quantity of a melody. So, they increased the neumes in order to write some of the quality of the melody too.^a Consequently, a difference in the rendering of the notes is observed among the neumes by which the quantity of melody is notated, since the note of the oligon, for example, is rendered in one way and the note of the kentemata in another.

138. The oligon calls for the sound to ascend disconnected. Whenever, therefore, continuous tone-by-tone ascent of notes which are susceptible of syllables is required, it is represented in the notation with the oligon only. When the oligon is subordinated to the ison or the descending neumes, the note is pronounced more vividly.

139. The petaste calls for a rise of the sound, a little higher from the natural pitch of the tone at

hand. It preserves this peculiarity when it is also subordinated by the ison and the descending neumes. The petaste is put by itself before one of the descending neumes. It is put with a clasma before many descending neumes.

140. The kentemata call for the sound to be continuous and their note not to be disconnected from the previous or the following note. When written above or below the oligon, they do not correspond to a syllable of a meaningful word. If in this position there happens to be a gorgon, it is assumed for the kentemata; on the beat, that is, is pronounced the note of the oligon and not of the kentemata, as in . If there happens to be an argon thus , the kentemata are included again in the half chronos of the previous note and on the beat is pronounced the oligon, which spends two chronoi. The analogous is understood when there happens to be a double or triple argon, as well as an hemigorgon or a trihemigorgon. It should also be known that the kentemata are not put at the beginning or after a petaste, but between the other neumes and that the kentemata do not replace the oligon, whereas the oligon does replace the kentemata in cases that give rise to confusion, such as . As the kentemata are here confused with the kentema, they give their place to the oligon, so that this position, is written . The same happens in other similar situations.

141. The apostrophos, the elaphron and the chamele call for the sound to descend disconnected. They all correspond to syllables. When the apostrophos is subordinated to the elaphron, it creates continuity between its two notes, on the first of which is understood a gorgon. The first note does not correspond to syllable of a meaningful word, though the second, which is pro-

nounced on the beat, does correspond to a syllable.

142. The hyporrhoe calls for its two notes, as well as the previous, to descend continuously and with one breath. If there happens to be a gorgon, a hemigorgon or a trihemigorgon, it is understood for its first note, while on the beat of the chronos is pronounced its second note. Neither the first or second note correspond to a syllable of a meaningful word. The hyporrhoe is analyzed thus: \cup ; $\cup \neg \neg$ | $\cup \overset{f}{\neg}$ $\cup \overset{f}{\neg}$ | $\cup \overset{f}{\neg}$ $\cup \overset{f}{\neg}$ | $\cup \overset{f}{\neg}$ $\cup \overset{f}{\neg}$. It should still be known that the hyporrhoe, like the kentemata, is not put at the beginning, but it comes after some previous neume. It can come after any neume, except the kentemata. It is moreover superscribed on the oligon and the petaste, in which case it subordinates them. Two apostrophoi do not replace the hyporrhoe, nor does the hyporrhoe replace the two apostrophoi, unless some syllable impedes.

In such a case, the hyporrhoe is analyzed into two apostrophoi, on the first of which is put the gorgon.

143. The kentema and the hypsele have no peculiar to themselves quality. Instead, they receive the quality of the oligon and the petaste, on which they lean like on bodies.^b When it is required that the ison, which is pronounced in one only way, receives a different quality, we notate it with the hypostaseis.

CHAPTER V

Concerning rhythm

144. Rhythmics is science of the application of the things said about the rhythms.¹ Rhythm is a system of chronoi in a certain order. It is characterized as fast and as slow. Four elements are observed in rhythm: the thesis, the arsis, the thud and the stilness. Thesis is the impetus of a body downwards. Arsis is the impetus of a body upwards.^b Thud is the beating of the body. Stilness is the body's stopping.²

145. Rhythm is created with the occurrence of any motion which maintains a set order and with the measurement of the chronoi spent during it. For example, the tympanist plays rhythmically when his beats upon the instrument preserve a determined order of the chronoi. When the

¹"The Greeks honoured rhythmics in earlier times and everything concerning the instrumental dialects was then more varied. The Greeks are fond of learning nowadays, but then they were fond of rhythm."Plutarch.^a

²This definition of rhythm is encountered in Aristides' work. Some say that he got it from Phaedros. According to Leophantos, rhythm is composition of chronoi which are considered as regards their analogies and symmetry with each other. According to Baccheios, it is the measurement of time of any motion that occurs. According to Aristoxenos it is time divided by any element which can contribute to rhythm.^c According to Nicomachos it is an orderly composition of chronoi. According to Didymos it is musical order in accordance with harmony. According to John Alexandreas it is time-extension, time-contraction and their symmetry. The aspects of rhythm considered are three: it is used for motionless objects, like when we say that a statue has rhythm; it is also used for everything movable, like when we say that some one's marching has a good

time spent during the beats is measured, whenever the rhythm is repeated with the following four: thesis, arsis, thud and stillness, the time of every rhythm is found to be equal and similar.³ Rhythm is observed at the tympanists, at hand-clapping and at dancers, since when the slow and fast lifting (arsis) and posing (thesis) of the feet occurs with certain order or certain proportion to each other, then there is rhythm. It is said that the hammering of the blacksmiths when they drop the hammers upon the anvil with good order is also rhythmic.

146. Rhythm is perceived with three of the senses:

rhythm; it is further used for sound, like when we say that some one's singing has good rhythm. Here we are going to discuss the third aspect.^d

Inventors of rhythms were Archilochos, Olympos, Orpheus and others. It is said that the invention of rhythm-making was made contemporarily with that of poetry. Some say though, that rhythm-making preceded epic poetry, because, they say, the epic poets observed first the fast and slow lifting (arsis) and posing (thesis) of the feet and by conveying these, they made the similar combinations of syllables, which we borrow for the creation of the meters. For this reason, these combinations were called feet. In the past, rhythm was called masculine by some and melody feminine, because melody is passive and formless and stands, in its relation to its opposite, as matter. Rhythm though, moulds the melody and moves it in set order. It stands as the creator to its creation.^e

³The musical instruments, such as lyres, auloi, phorminx etc. are melodic because on them high and low notes are distinguished. The guitar, the clavecin and the like, are harmonic, because they emit the notes harmonically. The tympani, dumbekia, tafia and the like are rhythmic.

How is it that the sound emitted by the rhythmic instruments is pleasing to hearing, while it neither rises or falls in pitch? Simply because it has a perceptible and ordered number and moves our soul, through the sense organ, with a determined and comprehensible order. Because rhythm expands within an area that permits the mind to comprehend--through hearing--the order of this rhythm.

with the view, like in dancing, with the hearing, like in chanting and with the touch, like when feeling the pulsations of the arteries. Musical rhythm, however, is only perceived with the view and the hearing. In music, rhythm applies to the motions of the body, to the melody and to the text. There are five parts in rhythmmics: one concerning the chronoi, one concerning the species of the feet, one concerning the tempo of the rhythms, one concerning the transformations and one concerning rhythm-making (rhythmopoeia).^f Matter of rhythm are the chronoi, as matter of melody are the notes. We start, therefore, with the chronoi.

CHAPTER VI

Concerning the chronoi

147. We call minimum chronos the one that seems atom to us, which is the first to be perceived by the sense and is considered undivisible.^a In earlier times it was also called short and was notated with the \circ . Compound is called the chronos that can be divided. Among the compound chronoi, one is double the minimum and was also called long and notated with the \equiv , one is triple and one is quadruple. The rhythmic chronos goes up to the quadruple only.

148. Some among the chronoi, the ones running faster than the regular, are called circular, others, the ones that use composite notes and delay more, are called excessive. Among all the chronoi, some are called rhythmical, some rhythmless and some rhythmlike. Rhythmical are the ones that preserve with each other an order proportioned in some way. Rhythmless are the completely unordered ones. Rhythmlike are the ones that stand in between. This means that they possess part of the order of the rhythmical and part of the disorder of the rhythmless.^b

149. The chronoi are measured with the thesis and the arsis. When the minimum chronos is on the thesis, it is notated with the 0, when it is on the arsis, it is notated with the 1. On the thesis we beat the right knee with the right hand and on the arsis, the left knee with the left hand.¹ As a rhythmic exercise for the

¹One might now ask: "Since it is an arsis, why do we beat on the knee?" Indeed, in early times the rhythms

beginners, we pronounce the beat of the thesis doun and that of the arsis tek.²

150. The minimum chronos has its sign undotted, like 0, 1, the double is dotted with the haple, like Ö, İ, the triple with the dipole, like Ö, İ and the quadruple with the triple, like Ö, İ. This way, the length of any chronos becomes evident.

151. Ratio is the relation of two dissimilar quantities to each other.^c Among the rhythmic chronoi, we observe three ratios: the equal, the double and the hemiolic.³ One chronos compared to itself gives the ratio of equality, like 0 1. Here, the thesis compared to the arsis, shows the equality of the chronos. Two chronoi compared to one give the double ratio, like 0 0 1. Here the two theseis compared to the one arsis appear to have double the time. Threechronoi compared to two give the hemiolic ratio, like 0 0 0 1 1.^e

151. Between the beating of the thesis and the arsis, we observe the thud and the stillness. The thud is emitted simultaneously with the beating on the tympan and lasts until a second beat occurs. The duration of the thud should be as required by the chronos. This duration is the result of the stopping of the hand and it is what we call stillness. We pronounce the thud as said, with the doun and the tek. Their pronunciation

were practiced in a different way, but we, being after facility, follow the way it is done today.

²Doun and tek are Ottoman words. Such syllables are pronounced until the student has practiced the rhythms well. Later, such pronunciations are given up and, instead, the syllables of the song are said.

³By quantity, are here understood the time-lengths of the arsis and the thesis, whence the dissimilarity of the equal ratio is established. The epitriton ratio is also added by some.^d This results when the 3 is compared to the 4, like Ö İ.

during the chronos is equal with the predetermined duration of the thud. The stillness is not pronounced, but it holds the hand motionless as long as the thud requires minus half a minimum chronos and then, the other hand starts to be lifted.

153. In order to show that with an example, let us beat this foot: $\dot{O} \cdot l \dot{O}$. The right hand beats the long chronos of the thesis \dot{O} on the right knee and with the pronunciation of the doum starts the thud. Then, the right hand remains in stillness until the double chronos is spent and the thud of the thesis \dot{O} ceases. The left hand starts being lifted after the hemiolic of the chronos of \dot{O} is spent, in order to beat right at the end of the double chronos of the \dot{O} by falling on the left knee and thus give rise to the thud of the arsis l . Then, the left hand becomes still and the right is lifted in order to beat on the right knee at the end of the one chronos of the l . When the right hand falls again to beat the thud of the thesis \dot{O} , there is stillness.

154. It follows that when two similar and isochronous signs are adjacent, as in $\dot{O} \dot{O} \dot{i} \dot{i}$, the stillness of the first is shorter than that of the second, because for the first thesis it is required to lift the hand in order to beat the second and thus cease the stillness, whereas the second thesis lasts during itself and the two next arseis. The same occurs with the two arseis.

CHAPTER VII

Concerning the feet

155. A foot is part of an entire rhythm and permits us to comprehend rhythm's entirety. A foot is composed of neither theseis or arseis alone. Instead, the theseis are interwoven with the arseis--either one of the former with many of the latter, or many of the former with one of the latter--and constitute the feet. It follows that parts of the feet are the arsis and the thesis.^a There is a two-point foot, as the 0 1 or the 1 0, a three-point foot, as the 0 1 1, the 0 $\dot{1}$, the 0 0 1, the $\dot{0}$ 1, the 1 1 0 or the $\dot{1}$ 0, a four-point foot, as the 0 0 1 1 or the $\dot{0}$ 1 1 etc. The foot 0 $\dot{1}$ is said to be composed of a thesis and a two-point arsis. The foot $\dot{1}$ $\ddot{0}$ is composed of a three-point arsis and a four-point thesis.¹

156. The genera of the feet are three: the equal, the double and the hemiolic. Equal is the dactylic because its one thesis is equal with its two arseis, $\dot{0}$ 1 1. Double is the iambic because its thesis is double its arsis, 1 $\dot{0}$. Hemiolic is the paeonic because its two theseis have a hemiolic ratio to its arsis, $\dot{0}$ 0 $\dot{1}$.²

¹"Prime is called the chronos that cannot be divided by any of the rhythmic elements. Two-point chronos is the one that counts twice the prime. Three-point chronos is the one that counts three times the prime. Four-point chronos is the one that counts four times the prime." Aristoxenos p.280.^b

²"Some add the epitriton genus for the ratio 3 to 4. There exist more genera which are called irrational not because they have no ratio, but because their ratios do not conform with the genera mentioned. Their rela-

157. Within the dactylic genus there are six rhythmic feet:

0 1 Simple prokeleusmatikos.³

0 0 1 1 Double prokeleusmatikos, which also occurs as 1 1 0 0.

Ö 1 1 Anapaestos with the major.⁴

1 1 Ö Anapaestos with the minor.

Ö î Simple spondeios.

Ö î Double spondeios.⁵

158. Within the iambic genus there are four rhythmic feet:

1 Ö or 0 î Iambus

Ö 1 Trochaeos, which Baccheios calls Choreios.

î Ö Upright iambus.⁶

Ö Ö î Significant trochaeos.⁷

159. In the paeonic genus there are two rhythmic feet:

Ö 0 î Two-limbed paeon.

tions are governed by numbers rather than by the rhythmic species." Aristides.^c

³The prokeleusmatikos is also called pyrrhichios. The reverse of it is the hegemon foot, 1 0.^d

⁴This is also called dactylos (finger) because the order of the syllables corresponds to the parts of a finger. It was called anapaestos (striking back) either because it was set in reverse order or because the sound rushed over the short syllables and poses on the long.^e

⁵Also called major spondeios. It is composed of a four-point thesis and a four-point arsis.^f

⁶It is called upright because of its solemn declamation and foundation.^g It is composed of a four-point arsis and an eight-point thesis.

⁷It is called significant because being composed of slow chronoi, it is applied on meanings of consequence, as it attracts the attention with the doubling of its thesis.^h It is composed of two four-point theses and one four-point arsis.

ō ī ō ō ī Accessible paeon.⁸⁺ⁱ

160. The smaller rhythm a foot of equal ratio can fill in, is a two-point rhythm. It can, on the other hand, fill in a rhythm of up to sixteen points. Larger rhythms in this genus it is not possible to distinguish. The smaller rhythm a foot of double ratio can fill in, is a three-point rhythm, l ō and the larger, an eighteen-point rhythm. The foot of hemiolic ratio starts with a five-point rhythm, ō ō ī and fills in up to a twenty five-point rhythm.

⁸The paeon is called two-limbed, in other words, with two members, because it makes use of theseis in two parts and one arsis, that is, a two-point thesis, a simple thesis and a two-point arsis. It is called accessible because it makes use of four parts, one long thesis, one long arsis, two long theseis and one long arsis and is composed of two arseis and two different theseis.

To sum up, all the feet the rhythms consist of, are twelve. These rhythmic feet were called rhythms too in earlier times as we read in Baccheios and in Aristides, who says: "Among the rhythms, some are composite and some non-composite. Non-composite are the ones that make use of one chronic foot, like the four-point ones. Composite are the ones composed of two or more genera, like the twelve-point ones. Mixed rhythms are the ones that are analyzed sometimes into chronoi, sometimes into rhythms."⁹

CHAPTER VIII

Concerning the meters^a

161. Measured is called the chant whose melodic neumes are separated with vertical lines that enclose melodic fragments of as many chronoi as the meter contains. The meters are formed in the following manner.

162. One thesis and one arsis, which count for two chronoi, form the meter marked with 2. For this meter we beat once on the knee and once in the air. This meter is identical with the prokeleusmatikos foot 0 1.

163. One thesis and two arseis, which count for three chronoi, form the meter symbolized with 3. For this meter we beat once on the knee and twice in the air, 0 1 1 or else, with a short beat on the knee and a long in the air, in which case this meter is identical with the iambic foot 0 1.

164. Two theseis and two arseis, which count for four chronoi, form the meter marked with 4. For this meter we beat twice on the knee and twice in the air. This meter is identical with the double prokeleusmatikos foot 0 0 1 1.

165. Two theseis and three arseis, which count for five chronoi, form the meter marked with 5. For this meter we beat twice on the knee and three times in the air --to the right, to the left and upwards. If we beat one long thesis, another short and one long arsis, this meter becomes identical with the foot called two-limbed paeon 0 0 1.

166. Two theseis and four arseis, which count for six chronoi, form the meter marked with 6. For this meter

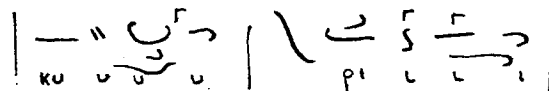
we beat twice on the knee and three times in the air --to the right, to the left and a long beat upwards. The European musicians apply still more meters which they call compound. We will not talk about them here, since we do not make use of them.

167. When we divide a melody--which is already completely written with its quantitative neumes and qualitative signs--into any of the mentioned meters by drawing the vertical lines, we have to be careful with the following:

168. The neumes enclosed between the vertical lines should write a melody of as many chronoi as many theses and arseis are contained in the meter. If the meter, for example, contains one thesis and two arseis, the vertical lines will enclose neumes which notate a melody of three chronoi; etc.

169. At times, at the point where a meter should be separated with the vertical line, occurs a neume which is indivisible because of the length of its note. In such a case we leave this meter undivided and divide the next to it. As this results to a meter of eight chronoi, that is of two theses and two arseis and again two theses and two arseis, we write on the meter the number 8 to indicate this. In related cases we write the 7, the 6, the 5, the 3 and the 2.

170. Emphasis is when the melodic length of the syllable of a significant word starts and ends together with the meter. For example, in "Τὰς ἐνεργείας" the syllables *κν* and *ρ* of the word *Κύριε* receive a melodic length



This length is worth four chronoi. If the meter with which I divide the entire troparion is of four chronoi as well, then, I obey the emphasis, if not, I spoil it.

171. The melody of the syllables *κν* and *ρ*, having a duration of eight chronoi, is enclosed in two meters

of the kind marked with the 4. The first meter, having the vertical line before the oligon, contains the oligon, the kentemata, the petaste and the apostrophos. The second contains the ison, the hyporrhoe, the oligon and the apostrophos, after which lies the vertical line again. The melodic length of the syllables, therefore, starts and ceases together with the meter.

172. We start the division into meters from the point where a melodic length of a syllable of four or two chronoi occurs. If a final note, which might be either short or of two and three chronoi, preceded, the time-value of this note is determined from the next emphasis. In the troparion mentioned, for example, on the word εὐχας the syllable χας gets three chronoi because of the following emphasis of the syllables κω and ρι.

CHAPTER IX

Concerning the rhythms

173. Rhythmical chant is the one whose melodic notes preserve the same order with the chronoi of the rhythm. For this reason, the neumes of the melody are separated by vertical lines which enclose a melodic fragment of as many chronoi as the rhythm contains. Every rhythm is composed of the feet mentioned. It is composed either in union or in period. A rhythm is in union when its composition consists of two simple and dissimilar feet. It is in period when its composition consists of more than two dissimilar feet.^a

174. The rhythms in union in the dactylic genus are two, the following:

Ö 1 0 1 Ionic with the major.

0 1 Ö 1 Ionic with the minor.¹

175. In the iambic genus they are also two, the following:

1 Ö Ö 1 Baccheios with the iambus.

Ö 1 1 Ö Baccheios with the trochaeos.²

176. The rhythms in period in the iambic genus are

¹It was called ionic for the vulgarity of its rhythm, because the Ions were caricatured for their vulgarity. The first is composed of a simple spondeios and a two-point prokeleusmatikos; the second is in the reverse order.^b Baccheios the Old calls this rhythm baccheian and says that it is composed of an egemon and a spondeios, 0 1 Ö 1.

²They were called baccheian because they are suitable for bacchanal chants. The first of them has first an iambus and then a trochaeos; the second is the reverse.^c

twelve, the following:

- 1 0 0 1 0 1 0 1 Trochaeos with the iambus.
 0 1 1 0 0 1 0 1 Trochaeos with the baccheios.
 0 1 0 1 1 0 0 1 Baccheios with the trochaeos.
 0 1 0 1 0 1 1 0 Iambus epitritos.
 0 1 1 0 1 0 1 0 Iambus with the trochaeos.
 1 0 0 1 1 0 1 0 Iambus with the baccheios.
 1 0 1 0 0 1 1 0 Baccheios with the iambus.
 1 0 1 0 1 0 0 1 Trochaeos epitritos.
 1 0 1 0 0 1 0 1 Simple baccheios with the iambus.
 0 1 0 1 1 0 1 0 Simple baccheios with the trochaeos.
 0 1 1 0 1 0 0 1 Middle iambus.
 1 0 0 1 0 1 1 0 Middle trochaeos.³

177. With the blending of these genera, more rhythmical species are produced, like:

- 1 0 0 0 1 First dochmios.
 1 0 0 1 1 0 1 1 1 Second dochmios.⁴
 1 0 0 1 | 0 1 0 1 } Prosodiacs of two unions.⁵
 0 1 1 0 | 0 1 0 0 }
 0 1 1 0 0 1 Prosodiac of three

³Among the twelve rhythms in period, four are composed of an iambus and three trochaeoi, the next four of one trochaeos and three iamboi and the remaining four, of two iamboi.

⁴Baccheios the Old says that the dochmios is composed of an iambus, an anapaestos and the paeon on the basis, 1 0 1 1 0 0 1 1 0.

The paeon is composed of one choreios and one egemon, 0 1 1 0.

The same writer displays another rhythm which he calls enoplion and is composed of iambus, egemon, choreios and iambus, 1 0 1 0 0 1 1 0. Others say that the enoplion, called prosodiac by some, is composed of one spondeios, one pyrrhichios, one trochaeos and one iambus, 0 1 0 1 0 1 1 0.

⁵These two are composed of two baccheioi and the ionic with the major.^d

0 1 1 0 0 1 1 0 Prosodiac of four.⁶

1 0 0 Iambus-like } Irrational choreioi.⁷
1 1 0 Trochaeos-like }

0 0 1 1 1 1 1 Cretan.⁸

0 0 1 1 Dactylos on the baccheios with the trochaeos.

0 0 1 1 Dactylos on the baccheios with the iambus.

0 0 0 1 1 1 Dactylos on the iambus-like choreios.

0 0 0 1 1 1 Dactylos on the trochaeos-like choreios.⁹

0 0 1 0 Dactylos with the iambus.^{10+h}

178. This is how many rhythms are preserved for us by Aristides and Baccheios the Old. The Ottomans have nearly thirty-two rhythms, among which we enumerate twelve, the simpler and more handy. They use two more marks, the 2 and the 1-. The 2 indicates two short

⁶The first is composed of one pyrrhychios, one iambus and one trochaeos, the second of the same three with the addition of one iambus.^e

⁷The iambus-like is composed of a long arsis and two short theseis. Considering its rhythm, it looks like the dactyl, but considering the number of the parts of the word, it looks like an iambus, because the iambus is 1 0 0, that is 1 0. The trochaeos-like is composed of two short arseis and one long thesis.^f

⁸This got its name from the nation.^g

⁹The first dactyl is constructed of a trochaic thesis and an iambic arsis, the second in the reverse order, the third receives one of the choreioi on the thesis and the other on the arsis and the third is the reverse to this.

¹⁰Aristides says that the cretan rhythm consists of a trochaic thesis, a trochaic arsis and an iambic arsis. As it seems that the text is erroneous when he says: "There are still more rhythms, six in number," while he enumerates five rhythms, Meibom, correcting the text, writes: "The cretan rhythm consists of a trochaic thesis and a trochaic arsis, 0 0 1 1. The rhythm dactyl with the iambus consists of an iambic thesis and an iambic arsis, 0 0 1 1." In fact, the exposition of this rhythm was deduced by Meibom from Aristides' list.

CHAPTER X

A list of Ottoman rhythms

179. In Turkish the rhythm is called *usul* and it is taught above all to the beginners. For the Turks it fulfills a double purpose. One is the same as for us. The other leads them to remember the chants they are taught or teach, because the Ottomans use no neumes to write the chants, but keep them in their memory with the rhythms. Here below we give a list of twelve of these rhythms, the following:

Sofyan $\dot{0} \ 0 \ 1$ or $\dot{0} \ 2$.

Duhek $0 \ \dot{1} \ 1 \ \dot{0} \ \dot{1}$, whose double is $\dot{0} \ \dot{0} \ \dot{1} \ \dot{0} \ \dot{1} \text{--} 2 \ 2$.

Semai $\dot{0} \ 2 \ \dot{0} \ \dot{1}$, whose fast is $0 \ 1 \ 1 \ 0 \ \dot{1}$.

Cember $\dot{0} \ 2 \ \dot{0} \ 0 \ 0 \ \dot{1} \ \dot{1} \ \dot{1} \ \dot{0} \ 1\text{--} 2 \ 2$.

Devri-kebir $\dot{0} \ \dot{0} \ \dot{1} \ \dot{0} \ 1 \ 2 \ 0 \ \dot{1} \ \dot{1} \ \dot{1} \ \dot{0} \ \dot{0} \ 1\text{--} 2 \ 2$.

Bereysan $\dot{0} \ \dot{1} \ \dot{0} \ \dot{1} \ \dot{0} \ \dot{0} \ \dot{1} \ \dot{0} \ \dot{0} \ 1\text{--} 2 \ 2$.

Muhamez $\dot{0} \ 2 \ \dot{0} \ \dot{1} \ \dot{0} \ \dot{0} \ \dot{1} \ 2 \ \dot{0} \ \dot{1} \ 2 \ \dot{0} \ 1\text{--} 2 \ 2$.

Remel $\dot{0} \ 2 \ \dot{0} \ 2 \ 2 \ \dot{0} \ 2 \ \dot{0} \ \dot{1} \ \dot{1} \ \dot{0} \ \dot{1} \ \dot{0} \ \dot{0} \ 1\text{--} 2 \ 2$.

Hafif $0 \ 1 \ \dot{1} \ 0 \ 1 \ \dot{1} \ \dot{0} \ 2 \ 0 \ 1 \ \dot{1} \ \dot{0} \ 2 \ 0 \ 0 \ 1 \ 2 \ 0 \ 1 \ 2 \ 0 \ 1\text{--} 2 \ 2$.

Sakil $\dot{0} \ 2 \ \dot{0} \ 2 \ 2 \ \dot{0} \ 2 \ \dot{0} \ \dot{1} \ \dot{1} \ \dot{0} \ \dot{0} \ \dot{1} \ \dot{0} \ \dot{1} \ \dot{1} \ \dot{0} \ 2 \ 0 \ 0 \ \dot{1} \ 2 \ \dot{0} \ \dot{1} \ 2 \ \dot{0} \ 1\text{--} 2 \ 2$.

Nim-sakil $\dot{0} \ 2 \ \dot{0} \ 2 \ 2 \ \dot{0} \ 2 \ \dot{0} \ \dot{1} \ 1\text{--} 2 \ 2$.

Nim-devir $\dot{0} \ \dot{0} \ \dot{1} \ \dot{0} \ 0 \ 0 \ 1\text{--} 2 \ 2$.

180. Observing the composition of the Ottoman rhythms, we find that the *sofyan* is the same with the paeon, that the *semai* consists of one paeon and one spondeios, $\dot{0} \ 0 \ \dot{1}$, $\dot{0} \ 1$, as the $\dot{0} \ 0 \ \dot{1}$ is the same with the $\dot{0} \ 2$ when played. In the same way, we might be able to analyze into feet all the Ottoman rhythms and to reflect that there is some proportion in them too.

181. Nim-sakil was called a rhythm because it is part of the entire rhythm sakil. The same way are called nim-hafif and nim-devir, in other words, half-hafif and half-devir, parts, that is, of the entire rhythms hafif and devir. The section, therefore, of one rhythm constitutes a smaller rhythm for the Turks. Moreover, they compose some rhythms not only of an entire rhythm and its half, but also of two, three, four and five entire rhythms.

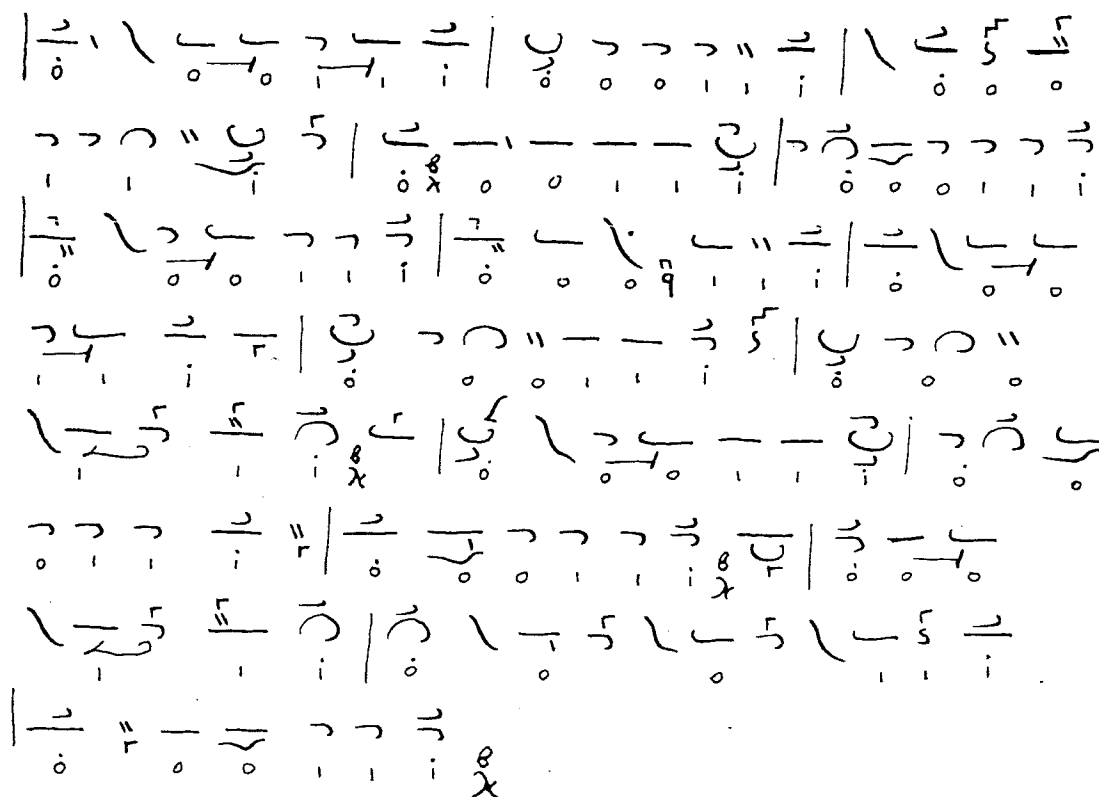
182. The beginning of a rhythm coincides with the beginning of a melody. Sometimes though, the beginning of the rhythm comes first and the melody starts on the second or third rhythmical sign. The cadence of the rhythm coincides with the cadence of the melody too. Sometimes though, in the cadences in the middle of the chant, the rhythmical cadence comes first.

CHAPTER XI

Concerning the rhythmic emphasis

183. Rhythmic emphasis is the concurrence of every thud of the rhythm with every note of the melody. In other words, there is rhythmic emphasis when each neume of the melody receives one thud of arsis or thesis of the rhythm. To elucidate this, let us adapt the melody "Θεὸς ἡγαγούθεις" on the rhythm $\dot{0} \ 0 \ 0 \ 1 \ 1 \ \dot{1}$, which is called dactylos on the iambus-like choreios.

echos $\frac{9}{8}$



184. The vertical lines enclose as many melodic neumes as the rhythm, on account of its chronoi, requires. Right after the line lies an oligon with a kentema, representing the note Di. This asks for two chronoi and coincides with the thud of the \dot{O} , which too asks for two chronoi. Next lie the two isa representing the notes Di and Di, which ask for one chronos each and coincide with the thuds of $O\ O$, which ask for one chronos each too. Then, lie an apostrophos and an ison, representing the notes Ga and Ga, which ask for one chronos each and coincide with the thuds of $l\ l$, which ask for one chronos each too. Next lies the oligon, representing the note Di, which asks for two chronoi and which coincides with the thud of the \dot{l} that asks for two chronoi. The rhythm is thus completed.

185. Any neume that has a gorgon, a digorgon etc, is linked to the preceding note and counts as one with it. This way it can coincide with a thud requiring one chronos. If the preceding note has a clasma, a dipole etc., its note together with the note which has the gorgon or the digorgon is considered as coincident with the thud of the rhythmic sign. We can, therefore, say that every thud coincides with every note.

186. The cadence of the last verse's melody in a troparion must coincide with the end of the rhythm, although the cadences of the other verses' melodies might not coincide with the endings of the rhythms. For this reason, if the three first verses comprise the rhythm ten times, the two last verses comprise the same rhythm six times, this is three times each, neither the melody or the rhythm being in excess.

187. The chronos that goes by without any note for the completion of a rhythm (which might occur in the middle of a troparion, if the rhythm is in excess of the melody), is called in rhythemics an empty chronos. We mark this with the huple, the dipole or the triple,

depending on its length. If this empty chronos is the minimum, it is called leimma (remainder) of rhythms. If it is long, that is double the minimum, it is called prosthesis (addition).^a

188. The following might be determined about the emphasis, after long study and meticulous work: Which melody is peculiar to 0, which to 1 or to 0 and which to 1; which melody belongs to one rhythm and which to another; whether various rhythms belong to one melody or various melodies to one rhythm; furthermore, which rhythm starts together with the melody, which rhythm starts before the melody and which after the beginning of the melody.

CHAPTER XII

Concerning the modes of the rhythms

189. Three modes are considered in rhythemics: the systaltic, the diastaltic and the hesychastic. Systaltic is the rhythm by which we can move into grievous passions, diastaltic is the one by which we incite to excitement and hesychastic the one by which we drive the soul to peace.

190. Those among the simple rhythms which start with a thesis are of the hesychastic mode. The ones that start with an arsis have diastaltic mode. This is so because the former seem as if they bring into the mind some kind of rest, while the latter seem like if they bring into the mind agitation and unrest. The hesychastic mode appears more elegant when it is made of rhythms ordered with equal ratio. The diastaltic mode appears more enthusiastic when it is made of rhythms whose ratio is observed to be hemiolic. Moreover, the rhythms with slow time-agogic are hesychastic and the ones with fast time-agogic are fervent and vigorous.¹

¹The rhythms are more peaceful when they start with a thesis and give a sense of order, though the ones that start with a sound on an arsis are agitating. The ones that include integral feet in their periods are better formed, though the ones that comprise the ending of the feet are the opposite. The ones that have short empty chronoi are simple and trivial, though those that have them long are most majestic. The ones composed of equal ratios are more elegant because they are smoother. Those of unequal ratios are for the reverse reason emotive. Moderate are the ones of double ratios, having both unquietude for their being unequal and smoothness for their being integral and with rounded ratios. Among

191. The composite rhythms are diastaltic in mode, because, being composed of mostly unequal rhythms, they are passionate and bring agitation and disturbance to the soul. They become even more passionate when they are composed of several rhythms of various genera, because the composite rhythms that remain in one genus, move the soul less, but those that change into other genera drug the soul with force to every change and oblige it to follow and identify itself with the variety.^a

192. Psalmody, being considered of the systaltic and the hesychastic modes, is more often set to rhythms of equal ratios, long and extended. The pyrrhychioi, that is, the war-dances, being considered of the dia-

those of equal ratios, the ones composed of short chronoi only, are very fast, more fervent, but ordered. The ones composed of mixed chronoi stand in between. The ones whose feet happen to be composed of long chronoi, give a sense of even more order. For this reason, we find that the short chronoi are applied on the war-songs, the mixed in dances, the long in sacred hymns. Being distinguished with serious involvement and love to their country, the Greeks brought their intellect to modesty by the equality and length of the chronoi, modesty being the health of the soul. The ones of hemiolioic ratio are, as said, more vital. Among them, the accessible has more motion, agitating the soul with the double thesis, but lifting the intellect upwards with the size of the arsis. Among those of double ratios, the simple trochaeoi and iamboi appear fast, are fervent and fit to dancing. The upright and the significant, having more long sounds, lead towards dignity. So, the simple rhythms are such.

The composite are more passionate because most often the ratios of the rhythms constituting them are unequal and give a very agitating impression. Moreover, they even do not always preserve the same order of their unordered rhythms, but they might start with a long and end on a short and the reverse, or even start once with a thesis and then begin the period in some other way. Most passionate are the ones composed of many rhythms, since irregularity is even greater in them. They bring, therefore, variety to the motions of the body and lead the intellect to not so little agitation." Arist. Book II, 97.

staltic mode, are set to rhythms of hemiolic ratios and of short, that is simple, chronoi. The dances that stand in the between and are considered of the diastaltic mode--the ones that do not lead the soul into passion, but motivate it to move the body with pleasure--are set to rhythms of double ratios but mixed.

CHAPTER XIII

Concerning the transformation of rhythms

193. As the soul rejoices through the eyes with the variety of colours, through the touch with the variety of touches, through the tasting with the variety of food and through the smelling with the variety of smells, in the same way the soul is variably disposed with the variety of sounds and rhythms, through hearing. For this reason, the musicians, looking towards an aim, make use of the transformation of rhythms.¹

104. Transformation is to change either the rhythms or their tempo.² When the declamation of chant becomes slower or faster by moving from one rhythm to another, the transformation is called rhythmic.² When the same rhythm is maintained, while its chronoi retard or speed up, it is called a tempo transformation.

195. Tempo is the velocity or retardation of the chronoi. In other words, when the ratio of the theseis to the arseis is preserved, but the sizes of

¹"We observe that many things happen with the rhythms, such as, while the ratio determined by the genera remains the same, the sizes of the feet change according to the power of the tempo; and, while the sizes remain the same, the feet become dissimilar. It is obvious that the differences of the divisions and formations take place around a stable size. To conclude, rhythm-making moves in many different ways, but the feet, by which we symbolize the rhythms, have unique and always the same motions." Aristoxenos Book II, 34.

²For the Ottomans, the rhythm of the pestes becomes semai.

each chronos move forward differently.^b For example, if we find two different chants that have the rhythm 0 0 0 1 1 1, which is called dactylos on the trochaeos-like choreios, we see that while the ratio of the three theseis to the three arseis is maintained, the time spent in one chant for the same rhythm is less than in the other, in such a degree that the chant which contains the rhythm ten times spends equal time with the other which contains the same rhythm five times. In rhythm, therefore, the ratios of the theseis to the arseis are predetermined, but the tempo is undetermined.

196. Tempo transformation appears in all the cheroubika and the koinonika that have kratemata. The transformation is notated $\overset{r}{x}$ for the fast and $\overset{7}{x}$ for the slow, because the cheroubika and the koinonika are chanted in a slow tempo but the kratemata in fast. Nevertheless, whether their tempo is transformed or not, they preserve from beginning to end one and the same rhythm.

197. Tempo transformation is not always allowed. It is allowed for the cheroubika and the koinonika, because of their kratemata, as well as for other papadika chants like the polyeleoi, pasapnoaria, oikoi, lessons, dochae etc. In the doxologies, the tempo is allowed to become faster in the "Ἄγιος ὁ Θεός" etc. It is allowed to become slower in the asmatikon. In the calophonic heirmoi it is allowed in those points of the melodies that are indicated with the tempo marks.

CHAPTER XIV

Concerning rhythm-making

198. Rhythm-making is the power of inventing rhythms. It is divided in three: the receipt, the use and the mixing. Receipt is to know which rhythm we must make use of. Use is to render the correct arseis to the theseis. Mixing is to interweave the feet of the rhythms with each other, because perfect rhythm-making is the one that includes all rhythmical formations.^a

199. If you are considering the creation of a rhythm, you should display all the minimum chronoi and divide them into rhythmic formations. If these formations have to each other any of the ratios that the chronoi of the feet have, they have good rhythm; if not, reform them again and again until the division of the whole turns out to have some ratio.

200. When there is a group of ten, 0000000000, you should observe that a rhythm cannot be made out of a pair and an octave, because rhythmically, the quadruple ratio is not good. If you divide the octave into a triad and a group of five, you still have no rhythmical ratio. If, however, you divide the five into three and two, 0 0 0, 0 0; 0 0 0, 0 0, then each three will have hemiolic ratio to each two points. Therefore, that is what the ten points consist of.

201. You could also divide the ten points into six and four, 0 0 0 0 0 0, 0 0 0 0. Thus a rhythmic formation of four and six points is composed, which has hemiolic ratio. Let us finally divide the ten points into two five points, 0 0 0 0 0, 0 0 0 0 0, which can either be

both simple and have equal ratio, or else, they could be divided as said before into three and two-point groups as composite rhythms.^b

202. The receipt, therefore, showed us three rhythmic formations, 0 0 0, 0 0, 0 0 0, 0 0; 0 0 0 0 0, 0 0 0 0 0; 0 0 0 0 0 0, 0 0 0 0. The use will render the correct arseis to the theseis, since no foot consists of the-seis alone. If in the first rhythmic formation, you make out of the three points of the first group of five, two theseis, one long and the other short and out of the other two points a long arsis, the first group of five gives a two-limbed paeon, $\dot{0} \ 0 \ \dot{1}$. If you do the same for the second group of five, then, the whole ten-point rhythm gives two two-limbed paeons, $\dot{0} \ 0 \ \dot{1}$, $\dot{0} \ 0 \ \dot{1}$, as it was divided with hemiolic ratio, which is that of the paeonic genus.

203. If in the second rhythmic formation, which consists of a group of six and a group of four and has hemiolic ratio 0 0 0 0 0 0, 0 0 0 0, you make three long theseis and three similarly long arseis, you create the accessible paeon, $\dot{0} \ \dot{1} \ \dot{0} \ \dot{0} \ \dot{1}$.

204. If in the third rhythmic formation, which consists of two groups of five and has the ratio of equality 0 0 0 0 0, 0 0 0 0 0, you make out of the first points, five short theseis and out of the remaining five points, five short arseis, you create the simple five-point prokeleusmatikos. Since, however, this foot is not in use, analyze the group of five into a triad and a pair 0 0 0, 0 0. Thus you produce a trochaeos out of the triad, $\dot{0} \ 1$ and a prokeleusmatikos out of the pair, 0 1. In a similar way it is possible to produce an iambus and a prokeleusmatikos, 1 $\dot{0}$, 0 1, out of the other group of five.

205. The mixing interweaves the feet that it finds prepared and constructs an entire rhythm. For example, when a paeon is interwoven with another paeon, a ten-

point rhythm, $\dot{O} O \dot{I} \dot{O} O \dot{I}$, is constructed. When, on the other hand, a paeon is interwoven with a prokeleusmatikos and an iambus, this ten-point rhythm is constructed: $\dot{O} O \dot{I} O I I \dot{O}$.

206. If a spondeios is interwoven with a prokeleusmatikos, the $\dot{O} \dot{I} O I$ is produced which is called ionic with the major. When one iambus is interwoven with three trochaeoi, the $I \dot{O} \dot{O} I \dot{O} I \dot{O} I$ is produced.

207. The mixing interweaves not only feet with feet, but also rhythms with feet and rhythms with rhythms, in order to set up a rhythmic body. An example of this is the prosodiac with three, which is the interweaving of a prokeleusmatikos foot and a baccheian rhythm. $O I I \dot{O} \dot{O} I$. Also, this prosodiac $I \dot{O} \dot{O} I \dot{O} \dot{I} O I$ is the interweaving of a baccheian rhythm and the rhythm ionic with the major.

Among what is stated by Aristides Quintilianos concerning the rhythms, that is what we have to say.

CHAPTER XV

Concerning the cheironomia

208. According to the ecclesiastical musicians, cheironomia is motion of the hand done with the purpose to make a melody visible and to measure the time elapsing, according with the rules of rhythms. As the ecclesiastical musicians say:

The cheironomia is law handed over to us by the Holy Fathers. The chanter begins the cheironomia the instant his voice is emitted, in order, by this cheironomia, to indicate the chant that has started. The chanter is using the cheironomia like an assistant who knows the various proportions, so that he might sing properly and not carelessly.

209. It is said that the cheironomia was indispensable to the chanter, because by it he was able to see the compositions of the quantitative and qualitative neumes by which every melody was written.

Whoever knew the cheironomia well therefore, chanted harmoniously, rhythmically and orderly. At present, however, it is of no other use to us but as information about the etymologies of some neumes which got their name from the cheironomia.

210. The ison was called thus because it keeps the sound unbending. Its cheironomia was done the way we make the sign of Cross, three fingers forming the symbol of the Holy Trinity.

211. The oligon was called thus because with it we ascend a little, that is, an interval of one tone, while with the kentema we ascend two tones discontinuously and with the hypsele four tones. We compare the oligon with the kentema and the hypsele, because

the first inventors of the neumes used for the ascent these three neumes only. The cheironomia of the oligon was done with the gesture that symbolizes our Lord's holy hand when he said: "Shoot the net to starboard and you will make a catch."

212. The petaste got its name from the cheironomia, because when it was done, the hand went up and skimmed. This gesture was done with the five fingers held together and appeared as if the hand was flying, the way the Lord's hand is symbolized when he said to the paralytic: "Take up your bed and walk."

213. Etymologically, the kentema derives from its cheironomia, because the person who did it, formed his forefinger as if it was pricking. The two kentemata had the same cheironomia too. Both cheironomiae were done the way deity and humanity are symbolized.

214. The hypsele was so called because no other neume rises the sound so high. The chamele was so called because no other neume lowers the sound so much and what lies low is called chamelon. The hypsele and the chamele had no cheironomia for themselves alone, as has the kentema, because the kentema, the hypsele, the elaphron and the chamele among the neumes, were called spirits (pneumata) and had common cheironomiae with the bodies (somata), which is what all the remaining neumes were, except the hyporrhoe, which was called neither body or spirit.^a

215. The apostrophos was so called, because it turns the sound away from the high pitch towards the low and stands opposite to the oligon. The elaphron was called so, because the two notes were descending with lightness and not the way they descend with the two apostrophoi. The hyporrhoe got its name because the sound, it is said, flows in the larynx like water flowing under small stones.^b

216. Judging from the emphasis, it appears that the cheironomia had the genus of a dactylic rhythm and was realized on the double prokeleusmatikos foot, or else, on the meter 4, which is accomplished with two theseis and two arseis (154), because all the old chants composed while the cheironomia was still in use, are found to preserve the emphasis (170) when set to this rhythm.¹

¹The cheironomia began to be performed in the church right away with the use of chanting. It reached its highest point under the emperor Theophilos at the year 830 A.D. because it was indeed performed by kings too and this emperor found it very entertaining to do the cheironomia even in joyful celebrations. After the fall of the Roman Empire, the cheironomia gradually decayed but was nevertheless preserved at least up to the year 1640, as at that time a certain Jacob, a Venetian barbar, asked the protopsaltes Demetres Tamias from Crete, what is the reason for the custom of the cheironomia and the chanting of the terere in the Eastern Church. The answer to this gave, at the request of Demetres Tamias, the philosopher Gerasimos, Blachos and Cretan. (In our times however, the use of the cheironomia is completely unknown) "With the nodding and blessing of our most holy Archbishop, they (the four domestikoi of the Great Church) start the honorable and God-pleasing praise, formulated by the very lips of our most wise King Leon, sent from God; and after the utterance of this and the artful motion of the cheironomia, all persons attending, sing and chant unanimously the sacred song, as if dropped from the honey-dropping lips of all the faithful subjects." Constantinos Porphyrogenetos, Vol. IV, p. 429.

THIRD BOOK

CHAPTER I

Concerning the genera in music

217. Genus in music is division of a tetrachord. The genera of music are three, the diatonic, the chromatic and the enharmonic.^a Diatonic genus for us¹ is the one that fills in the diapason system with seven tones, three major, two minor and two minimum (51).

218. Tetrachord is order of notes sung successively, whose two extremes are symphonous with each other on the diatessaron system. For example, the zo ne pa bou is called a tetrachord because it consists of four successive notes and because the extreme zo is symphonous with the extreme bou.

219. The Ancient Greeks called diatonic genus on the diapason system, what was also known as the Pythagorean octachord, which is

ke, zo ne pa bou ga di Ke.

Pythagoras discovered that this proceeds from low to high in the following order: leimma, tone, tone, that is zo-ne, ne-pa, pa-bou (which is the diatessaron system) and again, leimma, tone, tone, that is bou-ga, ga-di, di-ke (which is another diatessaron). Pythagoras added later at the beginning the proslambanomenos Ke at the distance of a tone.

¹We say for us, because our diatonic genus is different from that of the Ancient Greeks and the Europeans, as it will become obvious in the following.

220. The ratio of the interval of a tone is as 9:8. The ratio of the interval of the leimma to that of the tone is as 13:27. All the intervals of the Pythagorean octachord were known with these numbers, as stated by Aristides:

9216, 8192, 7776, 6912, 6144, 5832, 5184, 4608.^b
ke, zo, ne, pa, bou, ga, di, Ke.

221. When these seven intervals were redoubled, the bisdiapason system was produced, which Pythagoras divided into five tetrachords, from the proslambanomenos to the nete hyperbolaeon: tetrachord hypaton, tetrachord meson, tetrachord synemmenon, tetrachord diezeugmenon and tetrachord hyperbolaeon.

	Nete hyperbolaeon	2304 ke	} tetrachords
tone	hyperbolaeon diatonos	2592 di	
tone	trite hyperbolaeon	2916 ga	} hyperbolaeon
leimma	nete diezeugmenon	3072 bou	
tone	diezeug. diat.+nete syn.	3456 pa	} diezeugmenon
tone	syn. diat.+trite diezeug.	3888 ne	
leimma	paramesos	4096 zo	} synemmenon
apotome	trite synemmenon	3474 zo	
leimma	Mese	4608 Ke	} meson
tone	meson diatonos	5184 di	
tone	parhypate meson	5832 ga	} meson
leimma	hypate meson	6144 bou	
tone	hypate diatonos	6912 pa	} hypaton
tone	parhypate hypaton	7776 ne	
leimma	hypate hypaton	8192 zo	} hypaton
tone	Proslambanomenos	9216 ke	

222. The hypaton tetrachord contains the strings zo, ne, pa, bou. The meson tetrachord contains the strings bou, ga, di, Ke. The synemmenon tetrachord contains the strings ke, zo, zo, ne or zo, zo, ne, pa.

The diezeugmenon contains the strings zo, ne, pa, bou and the hyperbolaeon tetrachord contains the strings bou, ga, di, ke.

223. Synaphe is called when there is a common note in the midst of two tetrachord sung successively, as the zo, ne, pa, bou; bou, ga, di, ke, whence the term synemmenon tetrachord. Diazeuxis is called when there is the interval of a tone between two tetrachords sung successively, as ke, zo, ne, pa; bou, ga, di, ke, whence the term diezeugmenon tetrachord.

224. The proslambanomenos does not conduce to the formation of the lower string's tetrachord. It was added for no other reason, but to complete the lower octave and to lead the Mese in the middle of the bisdiapason system, in other words, of the fifteen-chord.²

225. Our scale of the diatonic genus

pa bou ga di, ke zo ne Pa,

consists of two similar disjunct tetrachords. Their similarity results from the proportionally equal intervals of their tones, as the six intervals within the two tetrachords are found, when compared in pairs, equal. For example, the pa-bou is equal to the ke-zo, the bou-ga is equal to the zo-ne and the ga-di is equal to the ne-Pa. Compared in any other way, they are unequal.

²The proslambanomenos, Aristides says, was called so, because it is not associated with any of the tetrachords mentioned, but is put in additionally in order to form an octave with the mese, as its tonal ratio to the hypate hypaton is equal to the ratio of the mese to the paramesos. Hypate hypaton was called the string next to the proslambanomenos because it is the first string to be put in the first tetrachord and in old times the first was called hypaton and the one lying next to it parhypate.^c

226. If one wants to know how the intervals of the scale of our diatonic genus on the diapason system are represented with numbers, we say that this is what we found the closer to truth possible:

1	8/9	22/27	3/4	2/3	11/18	9/16	1/2
di	ke	zo	ne	pa	bou	ga	Di. ³

It follows that we find the relation between two tones by observing the relations of these fractions and by multiplying the numerator of the first by the denominator of the second and again the numerator

³The interval di-ke is larger than the ke-zo and the ke-zo is larger than the zo-ne. If it is supposed that the di-ke is equal to 12, the ke-zo will be equal to 9 and the zo-ne equal to 7. On the string, consequently, we find the ratio of the di-ke

to the ke-zo to be equal to $\frac{1}{9} : \frac{1}{12}$ and its ratio to the zo-ne equal to $\frac{1}{9} : \frac{7}{108}$.

Proof.

Since $12 : 9 :: \frac{1}{9} : x$, then $12x = 9 \cdot \frac{1}{9} = 1$ and $x = \frac{1}{12}$. And again, since $12 : 7 :: \frac{1}{9} : x$, then $12x \cdot 7$

$\cdot \frac{1}{9} = \frac{7}{9}$ and $x = \frac{7}{12} = \frac{7}{9 \cdot 12} = \frac{7}{108}$.

One could experience this truth this way: One takes two pandourides, one of which is not fretted, the other being fretted with the tones of our music as precisely as possible. He then makes the buzz of the unfretted pandouris symphonous with the ne of the fretted one and supposes that this buzz is the di. He then plays on the fretted pandouris the pa and looks for its symphony on the unfretted pandouris. Wherever he finds it, he writes the ke. He then divides this newly found interval di-ke into twelve sections. Then he makes the same buzz symphonous with the pa and plays the bou, then he looks for its symphony and wherever he finds it, he writes the zo. He then makes the same buzz again symphonous with the bou, plays the ga, looks for its symphony and wherever he finds it, he writes the ne. Then he observes the newly written notes and finds out that the ke is written on the 12, the bou on the 9 and the ga on the 7.

of the second by the denominator of the first.

For example, the pa : bou :: $\frac{2}{3} : \frac{11}{18} = 36 : 33 =$

12 : 11. And again, the ke : zo :: $\frac{8}{9} : \frac{22}{27} =$

216 : 198 = 108 : 99 = 12 : 11.

227. The European musicians, having understood that the vibrations of the strings are different from their various lengths, thought it reasonable to define the ratios of the tonal intervals with the vibrations. They say, therefore, that the numbers of the vibrations that illustrate their tones are in the reverse ratio to the strings' lengths. They are the following:

1	8/9	4/5	3/4	2/3	3/5	8/12	1/2
ut	re	mi	fa	sol	la	si	Ut.

228. When we want to find the relation between two of their tones, we do as said above (226). When we want to find the relation of two tones, one of their kind, the other of our kind, then, we represent every tone with two notes and two fractions and, doing as above, we find the relation of each tone separately. For example, when we want to know what is the relation of the di to the re, we do as follows: Since ga: di:: $\frac{9}{16}$

: $\frac{1}{2} = 18 : 16 = 9 : 8$ and since ut : re :: 1 :

$\frac{9}{9} = 9 : 8$, the di is equal to the re.

Here is a table where some intervals, the most useful to know, are noted:

di : ke	9 : 8	re : mi	10 : 9
ne : pa	9 : 8	sol : la	10 : 9
ga : di	9 : 8	ut : re	9 : 8
pa : bou	12:11	la : si	9 : 8
ke : zo	12:11	mi : fa	16 : 15
bou : ga	88:81	si : ut	16 : 15
zo : ne	88:81	fa : sol	9 : 8
pa : di	4 : 3	la : re	27 : 20
ke : pa	4 : 3	mi : la	4 : 3
di : Di	1 : $\frac{1}{2}$	re : Re	1 : $\frac{1}{2}$
pa : Pa	1 : $\frac{1}{2}$	la : La	1 : $\frac{1}{2}$

CHAPTER II

Concerning the semitones

229. Tones have been called the seven intervals of the diatonic scale pa bou ga di ke zo ne Pa. When any one of them is divided into two, but not exactly in the middle, and we consider one of the resulting intervals, this is called a semitone.¹

230. When at the interval of a tone, considered as ascending, the interval of a semitone is added so that one interval is made out of the two, their result is called diesis. Diesis, in other words, is the increase of a tone. When that is, the tone is silenced and, instead, the semitone over it is pronounced. The diesis is notated with the sign ¢ . The decrease of the tone, that is when the tone is silenced and, instead, the semitone below it is pronounced, is called hyphe-sis and is notated with the sign ƒ . Both the diesis and the hyphe-sis refer to the higher pitch. When they refer to the low, the reverse occurs. This means that the increase of the tone produces an hyphe-sis and its decrease a diesis.

¹Semitone does not mean the tone divided exactly in two, as the twelve into six and six, but indefinitely, as the twelve into eight and four, or nine and three etc. So, the tone ga-di is divided into two intervals, the higher of which is one third and the lower two thirds etc. Therefore, the latter interval might still be divided. The semitones of the tones bou-ga and zo-ne, however, are the smallest and cannot be further divided, because they are considered as one quarter of the major tone each, that is as 3 : 12.

231. I make therefore, a diesis if descending from the ke, for example, I omit the tonal interval of the di and instead, I take one or two thirds of this tone, or else, one, two or three quarters of it. In the same way I make dieseis to all the other intervals of the diatonic scale. We are able to observe all this only on a string.²

232. I make an hypthesis, when descending from the ke, I omit the tonal interval of the di and, after adding one or two thirds or one, two or three quarters, I get this interval thus composed and pronounce the di. The same way I make hyptheseis to all the other intervals of the diatonic scale.

233. To sum up, diesis is the note of a tone of the scale, which has been raised by a semitone. For example, in the scale pa bou ∕ di ke zo ∕ Pa, the two dieseis show that the notes ga and ne are pronounced a semitone higher than the natural ones. Hypthesis is the note of a tone of the scale lowered by a semitone. For example, in the scale pa bou ∘ di ke zo ∘ Pa, the two hyptheseis signify that the notes ga and ne are recited a semitone lower than the natural ones.

234. When the diesis or hypthesis of a tone is recited, the note of the tone whose diesis or hypthesis we pronounce, is completely silenced, because our music, as well as that of the Ottomans, requires that the scale

²The signs ∕ and ∘ are used indefinitely for any interval greater or smaller than a tone. When exact inquiry into these is required, this is how they are notated in ascending order:

Increase		Decrease	
the ♀ of one quarter	1/4	the ♂ of one quarter	1/4
the ♀ of two quarters	2/4	the ♂ of two quarters	2/4
the ♀ of three quarters	3/4	the ♂ of three quarters	3/4
the ♂ of one third	1/3	the ♀ of one third	1/3
the ♂ of two thirds	2/3	the ♀ of two thirds	2/3 ^a

is filled in with seven intervals. In European melodies though, the tone, the diesis and the hyphesis might all be recited. When we want to write such melodies, therefore, we use the isa and on them the hyphesis or the diesis. For example, here is how the melody di di ga ga bou bou pa pa is written: $\overline{\text{q}} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q}$ and here, how we write the melody pa pa bou bou ga ga di: $\overline{\text{q}} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q} \text{ — } \text{q}$.

CHAPTER III

Concerning the differences in notes

235. Out of what has been said, it becomes obvious that only the three major tones of our diatonic scale are equal with the tones of the Ancient Greeks, the others being unequal. The leimma of the Ancient Greeks or the semitone of the Europeans si-ut, are smaller than our minimum tone bou-ga. For this reason the notes of our diatonic scale are recited differently, some being identical, some higher and some lower. The ga and the di are recited on the same interval as the European ut and re and are in no way differing from them in height or lowness. The ke is slightly higher than the mi, the zo is a semitone higher than the fa, the ne is slightly lower from the sol, the pa is slightly lower too than the la and the bou is little lower than the si.

236. Nearly all the hypheseis (flats) of the Europeans are a little lower than our hypheseis. Although all of our notes can become hypheseis or dieseis, the fa and the ut of the Europeans cannot become hypheseis and the si and the mi cannot become dieseis (sharps).

237. All the notes are distinguished into three kinds, as the pa natural, pa diesis and pa hyphesis. The zo, though, is distinguished into four kinds, the zo natural as obtained from the diapason system and which forms a minor tone out of the interval zo-ke, the zo barys as obtained from the wheel and is pronounced aanes, forming a major tone out of the interval zo-ne, the zo hyphesis and the zo diesis.

238. The same notes give another impression to the sense of hearing at the ascent and another at the descent. The ecclesiastical musicians, therefore, gave to the same note another name at the ascent and another at the descent. For example, the pa in relation to the ne was pronounced annanes, but in relation to the bou it was pronounced aneanes. This is what is called quality of the notes (73).

239. The diesis and the hyphesis do not change the quality of the notes, unless they are recited. For example, in the intervals pa bou ga di / zo, if I stay around the notes pa bou ga di and make the cadence on the di, the note di has the quality of the agia (73), but if I touch, even for a while, on the hyphesis of the ke, then, the di has the quality of the necheanes. To the quality of the notes contributes as well the pronunciation, because quality of the annanes is that its pronunciation is heard agreeable and smooth. This quality is also transmitted to the notes pa and ke. Quality of the neanes is that its pronunciation is heard joyful and pricking. This quality is transmitted to the notes bou and zo. Quality of the nana is that it is heard buzzing and voluminous and is transmitted to the ga. The quality of the agia is masculine and rough and is transmitted to the di.

CHAPTER IV

Concerning the chromatic genus

240. Chromatic genus is the one in whose scale exist semitones derived from hypheseis, dieseis or both dieseis and hypheseis. The scale with the hypheseis is:

ne ϑ bou ga, di ϑ zo Ne.

The one with the dieseis is:

pa bou ς di ke zo ς Pa.

The scale with both dieseis and hypheseis is:

pa ς ϑ di, ke ς ϑ Pa.

In this scale we find two dieseis and two hypheseis.

241. In music, chroma (colour) is called what has the power to paint the quality created by the notes of the diatonic scale and produce a quality of different ethos. This is what the dieseis and hypheseis can do. Just one hyphesis is able to paint the series of notes in a tetrachord and make it seem as something completely different. The change becomes even greater with two hypheseis.¹

242. The chroma is sung, Eucleides says, at the descent with a trisemitone, a semitone and a semitone again, like ga ς bou ϑ pa ne ς, the interval ga-bou being a trisemitone--as the ga is in hyphesis and the

¹The different ethos that the change of the genus causes to a melody, can be experienced this way: On an instrument, play in the chromatic genus a melody of the diatonic genus. You will then realize that it is altered as much as a Greek Homeric verse alters in verbal speech, when pronounced by an Arab who ignores the Greek Language.

bou in diesis--the interval bou-pa a semitone and the pa-ne another semitone. At the ascent it is sung reversely: semitone, semitone and trisemitone ne/ pa bou/ ga/.

243. The chromatic genus is not confined to give just one scale, as is the diatonic, but it can construct two entirely chromatic scales and two mixed, listed here below:

ne / bou ga di / zo Ne }	The entirely chromatic
pa / / di ke / / Pa }	
pa / / di ke zo ne Pa }	The mixed ²
pa bou ga di ke / / Pa }	

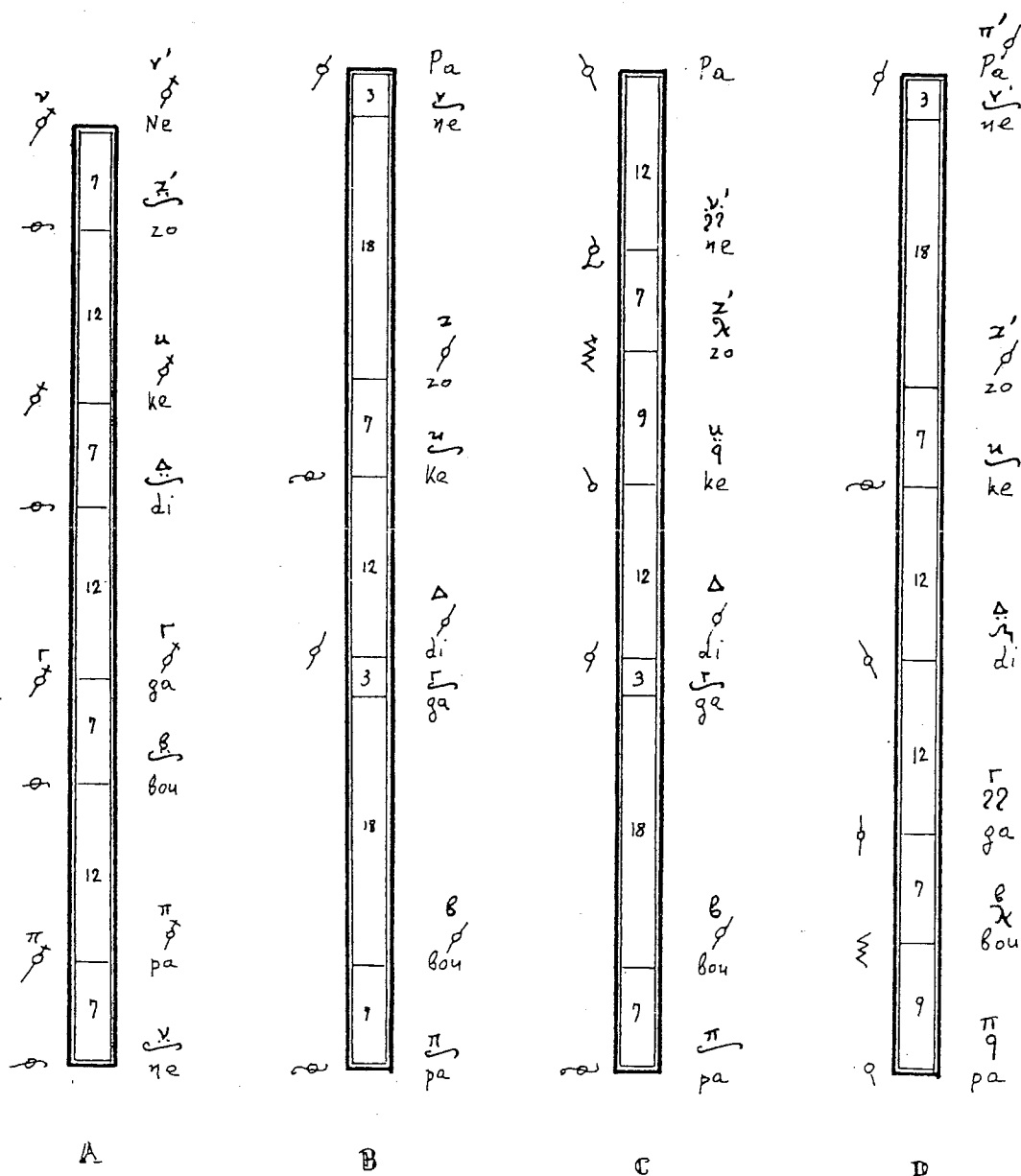
244. The chromatic scale ne / bou ga di / zo Ne does not form tetrachords but trichords which are absolutely similar and conjunct with each other in this manner:

ne / bou, bou ga di, di / zo, zo ne Pa.

When this scale starts with the di and its direction is towards the lower pitch, it asks for the interval di-ga to be a major tone, the ga-bou a minimum tone, the bou-pa a major tone and the pa-ne a minimum tone. When it is directed towards the higher pitch, it wants the interval di-ke a minimum tone, the ke-zo a major tone, the zo-ne a minimum tone and the ne-Pa a major tone.^a It follows that among the notes of this chromatic scale only the bou, the ga and the di are identical with the notes bou, ga and di of the diatonic scale, though the rest are movable, because in this chromatic scale the interval bou-ne comprises a major tone and a minimum tone, though in the diatonic scale it comprises a minor and a major tones. The same holds for the interval di-zo.

²It is possible to generate even more entirely chromatic or mixed scales, about which we speak later. The ones listed here are the most commonly used and they constitute echoi.

245. The chromatic scale $pa \ \phi \ \diagdown \ di, \ ke \ \phi \ \diagdown \ Pa$, consists of two tetrachords. In each tetrachord the semitones are situated in such a way that the interval $pa-bou$ is equal to the $ke-zo$, the $bou-ga$ equal to the $zo-ne$, the $ga-di$ equal to the $ne-Pa$ and the entire tetrachord $pa-di$ is equal to the tetrachord $ke-Pa$. The interval $pz-bou$ is equal to a minimum tone, the $bou-ga$ is a trisemitone and the $ga-di$ a semitone, it is equal to $3/12$.



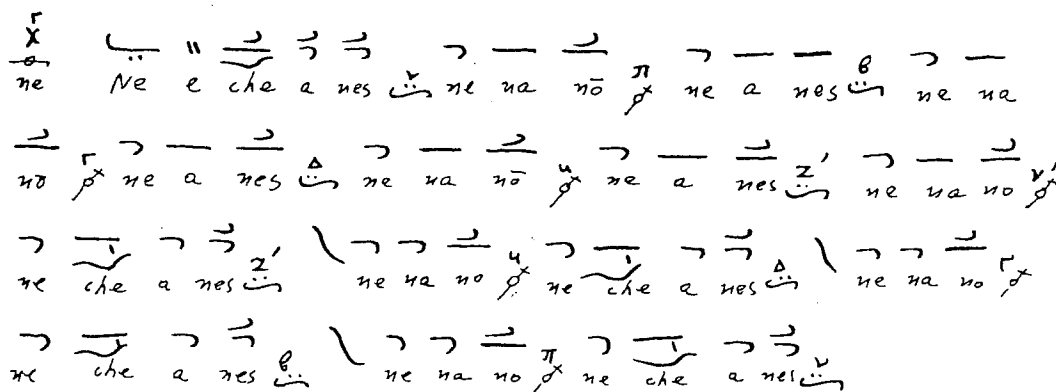
CHAPTER V

Concerning the notes of the chromatic genus

246. The ecclesiastical musicians handed over to us four notes in the chromatic genus:

necheanes, nenanō, neanes, nenano.

Among these notes, we use the two middle ones when we ascend and the two extreme when we descend. Here is, for example, the tune on which we sing the scale A, ne ϑ bou ga di ϑ zo, Ne.



We use the intervals of a minimum and a major tone as defined (244).

247. We sing with the same notes the scale B, pa ϑ di ke ϑ Pa, and their melody is written with the same neumes, but the notes preserve the intervals defined in (245). The necheanes of the scale A, therefore, differs from the necheanes of the scale B since the former sounds with the interval of a minimum and a major tone, though the latter with the interval of a minimum tone and a trisemitone. For the same reason differ from each other the note neanes, nenanō and ne-

nano.

248. Among the eight notes of the chromatic scale B, four, the pa, the di, the ke and the Pa are fixed, that is they are the same with those in the diatonic scale, their pitch differing neither in lowness or height from them. The remaining four move into hyphe-seis and die-seis. The martyria of each appears at the scale B.

249. The mixed scale, having two dissimilar tetrachords, one chromatic, the other diatonic, requires that the chromatic is pronounced with the chromatic notes and the diatonic with the diatonic ones. The notes of the mixed scale C, pa ρ δ di ke zo ne Pa, are, therefore, chanted and written thus: π α χ

Ne e che a nes π ne na no ρ ne a nes π ne na no ρ an na nes q

ne a nes χ ne na η a gi a π a a nes η ne che a nes χ

a ne a nes i ne na no ρ ne che a nes π ne na no ρ ne che a nes π

250. The first tetrachord of the mixed scale D, pa bou ga di ke ρ δ Pa, is said with the diatonic notes, but its second tetrachord is said with the chromatic notes.

Their melody is chanted and written thus: π ρ χ









An na nes ρ ne a nes χ na na η a gi a η an na nes q

ne na no ρ ne a nes η ne na no π ne che a nes η ne na no ρ ne che

a nes η ne a a gi e η a a nes η ne che a nes χ a ne a nes q

251. Examining the chromatic notes with regard to their quality, we find that the neanes and necheanes are emitted freely and brilliantly, the sound being pronounced with delicateness and sweetness. This quality prevails over the entire chromatic scale A. The nenano and nena-no are pronounced gravely and wildy and the voice is emitted with volume and with certain degree of mournful-

ness. This quality prevails over the entire chromatic scale B.¹

252. The matyriae of the chromatic scale A are made by adding the consonants of the monosyllable notes to those two signs,   . So, the di has the martyria  , the ke has the martyria  etc. The martyriae of the chromatic scale B are made by adding the above to these two signs   . So that the di has the martyria  , the ga has the martyria  etc. The martyriae of the mixed scales are as we have said here for the chromatic notes and as we have said in (101) for the diatonic notes.

¹neanes and necheanes are in essence one word and indicate just one note, because the same note that we call neanes when ascending, we call necheanes when descending. Consequently, they both preserve one kind of quality. Similarly the nenanō and the nenano are just one word which indicates just one note. They both, therefore, have the same quality.

CHAPTER VI

Concerning the parallage of the chromatic genus

253. If we have said that in the diatonic genus it is more useful to make the parallage with the monosyllable notes, we did it in order to turn into facility by getting rid of the many difficulties. In the chromatic genus, however, we say that the parallage must be done with the polysyllable notes until the sense of hearing is satisfactorily used to them. After this, it is possible to use the monosyllable notes too.¹

254. For the realization of the parallage, before singing, we see--if the melody is chromatic--which martyria is written. If we see the martyria Δ , it becomes obvious that starting note is the di, pronounced neanes; if it is the \mathfrak{u} , it becomes obvious that starting note is the ke, which is pronounced neanes; if it is the \mathfrak{v} , it becomes obvious that starting note is the ne, which is pronounced necheanes; if it is the \mathfrak{x} , it becomes obvious that starting note is the pa, pronounced necheanes; if it is the $\mathfrak{r}/$, then starting note will be the ga, pronounced nenanō; if it is the $\Delta/$, starting note will be

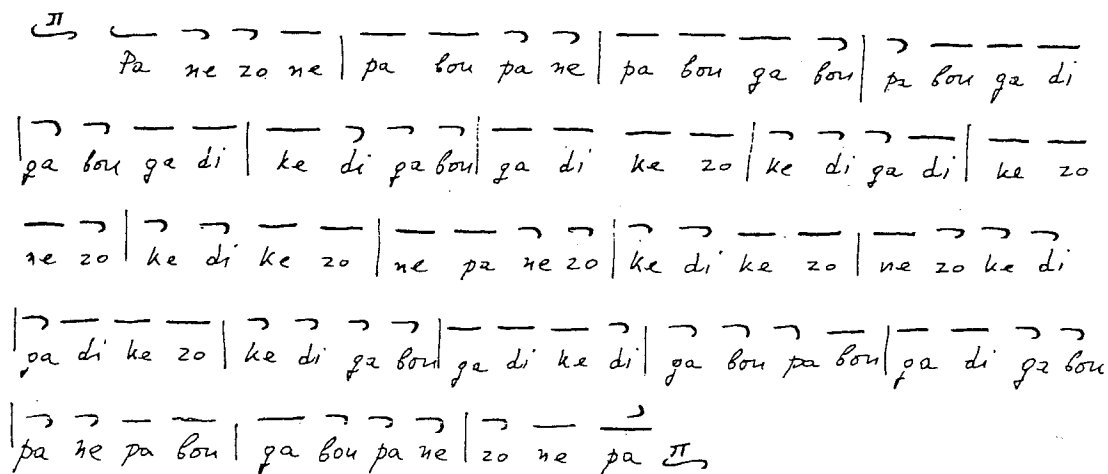
¹When the teachers teach this highly melodic genus to the students, they should pay great attention that the students observe carefully the pronunciation of these monosyllable notes, because after been taught the diatonic genus, the students get used to pronounce them with the intervals of this genus and then, it is not easy for them--hearing the notes pronounced differently in the chromatic genus--to recite them on the chromatic intervals. It is through this means that our ancestors preserved up to us this genus of melody.

the di, pronounced in the same way and if it is the martyria ♩ , starting note will be the ga, pronounced neanes.

255. Let us now write this parallage with these neumes with which the diatonic parallage was written.

As before the neumes the martyria π is written, pronounce the ison necheanes, the first apostrophos nenano, the second necheanes; next, the first oligon nenanō, the second neanes and the third nenano; then again the first apostrophos necheanes etc.

The parallage of the chromatic genus sung continuously:



256. As for all the neumes, the notes and the hypostaseis in discontinuity, everything said concerning the diatonic genus is understood for the chromatic genus too.

²After the students are trained to sing the polysyllable notes of the chromatic genus as said, they can train themselves to sing the same parallage with the monosyllable notes as they are subscribed. This is done for exercise.

CHAPTER VII

Concerning the enharmonic genus

257. Enharmonic genus is the one in whose scale are semitones, actually, quarters of a major tone, either as hypheseis or dieseis or as both hypheseis and dieseis. As hypheseis they are thus:

pa bou ρ di ke zo ne Pa.

As dieseis, thus:

pa ρ ga di ke zo ne Pa.

And as dieseis and hypheseis, thus:

pa ρ ga di ke ρ ne Pa.

258. In music, harmony is called the genus which has in its scale intervals of a quarter of the major tone. Such an interval is called enharmonic hyphesis or enharmonic diesis, as the interval which is half a major tone is called chromatic diesis. Since the minimum tone, considered equal to 7, gives when divided by 3 and 4, a quarter and a third of the major tone, when we take and interval bou-ga equal to 3, we find the enharmonic diesis. When we apply this on a scale, we realize the enharmonic genus, because, Aristides says, the enharmonic genus is characterized by the dieseis that are quarters of the tone.^a

259. In the days of Eucleides, the enharmonic genus was sung in descent: two-tone, diesis, diesis, else said: two-tone, quarter, quarter. In ascent it was sung reversely: diesis, diesis, two-tone, or else said: quarter, quarter, two-tone. In our days, however, melodies in such scales are not preserved.. Instead, one enharmonic

diesis and one enharmonic hyphesis are in two tetrachords, not in one.

260. In the scale pa δ ga di ke φ ne Pa there are one diesis and one hyphesis of the enharmonic genus as the intervals bou-ga and ke-zo have no greater size than nearly a quarte of the major tone, while the zo hyphesis is here lower than the one in the chromatic scale Pa φ δ di, ke φ δ , Pa (243).

261. The two tetrachords of the same scale pa δ ga di, ke φ ne Pa, are dissimilar with regard to their middle intervals. For this reason, when the melody of the enharmonic genus starts with the ga, it is the zo hyphesis that should be symphonous with the ga and not the note ne. What is accomplished in the diatonic and the chromatic scales with the tetraphony, is accomplished here with the triphony:

ne pa δ ga, ga di ke φ , φ ne pa φ . Therefore, here too conjunct similar tetrachords are constructed because their middle intervals are equal: the ne-pa equal to the ga-di, the pa- δ equal to the di-ke, the δ -ga equal to the ke- φ etc.(262). The mixed

262. The mixed of diatonic and enharmonic scales are here as well two:

pa bou ga di, ke φ ne Pa

pa φ ga di, ke zo ne Pa

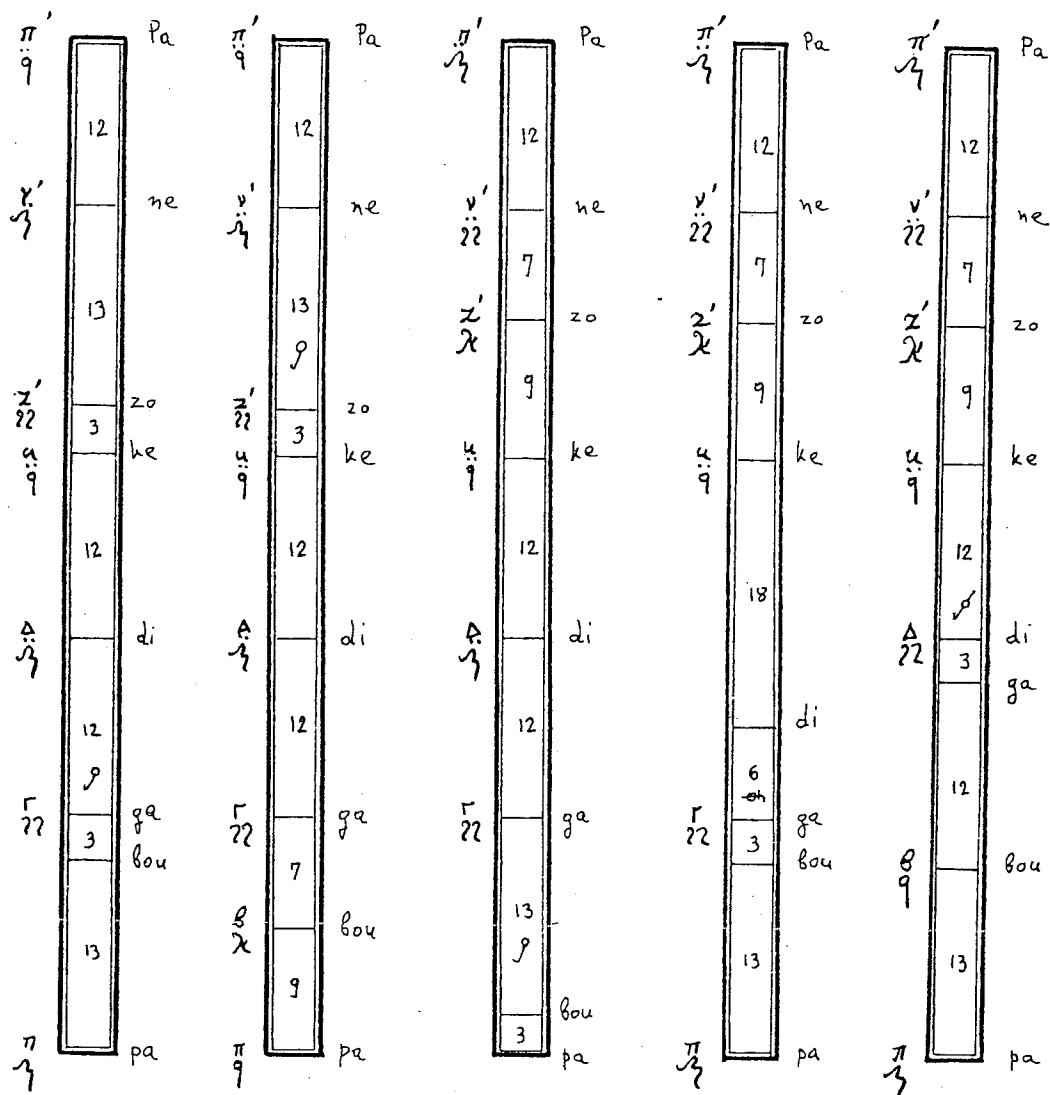
The mixed of chromatic and enharmonic scales are two more:

pa δ ga φ ke zo ne Pa

pa δ δ di ke zo ne Pa.

The intervals of the first are as follows: the pa-bou is greater than the major tone, the bou-ga is a quarter of it, the ga-di is its half and the di-ke is a trise-mitone. The intervals of the second scale are: the pa-bou is greater than the major tone, the bou-ga is equal to a major tone, the ga-di is a quarter of a major

tone.



In Psalmody, these are the most common scales of the enharmonic genus, but there exist still more, as will become obvious later.^b

263. To sum up, the scales that derive from the enharmonic genus and are very much in use, amount to five, the diagrams of which we have drawn above. The teachers did not hand over to us notes and parallage peculiar to

the enharmonic genus. Instead, every melody of the enharmonic genus was pronounced with the notes and the parallage of the diatonic genus. We are, therefore, doing its parallage with the monosyllable notes pa bou ga di ke zo ne Pa.

264. Out of what has been said about the three genera, it becomes obvious that every melody is either diatonic, chromatic, enharmonic, mixed or common. Diatonic is the melody whose ascending and descending progressions are done on the diatonic scale. Chromatic is the melody whose ascending and descending progressions are done on the chromatic scale. Enharmonic melody is the one whose ascending and descending progressions are done on the enharmonic scale. Mixed is the melody whose ascending and descending progressions are done on a scale which appears to have two or three common neumes, which belong, that is, either to the diatonic and the chromatic, or the diatonic and the enharmonic, or the chromatic and the enharmonic. Common is the melody whose ascending and descending progressions are done on a scale which consists of the fixed notes. Which are the fixed notes we shall say in the following.

CHAPTER VIII

Concerning the shades

265. Fixed notes are the ones whose tones are not modified with the differences of the genera, but remain on one tension.^a Movable or transferred notes are the ones whose tones are altered with the differences of the genera and do not remain on one tension, in other words, the notes that indicate some times minor, some times major intervals in the various compositions of the tetrachords.

266. Shade is a special division of the genus. The Ancient Greeks produced the shades from the different divisions of the tetrachords, leaving the extremes of the tetrachord as fixed notes, while making the middle notes movable. The shades known to Euclides and mentioned by him, are six, one in the enharmonic genus, three in the chromatic and two in the diatonic.

267. The first shade is characterized by quarter-tone dieseis and is called enharmonic. Its intervals were expressed numerically thus: $6 + 6 + 48 = 60$, diesis, diesis, two-tone. The second shade is characterized by dieseis that are the third of a tone and is called chroma malakon. It was expressed numerically thus: $8 + 8 + 44 = 60$, diesis, diesis, trisemitone-plus-diesis. The third shade is characterized by dieseis which are hemiolic to the enharmonic diesis. It is called of hemiolic colour, $9 + 9 + 42 = 60$, hemiolic diesis, hemiolic diesis, trisemitone-plus-diesis. Peculiar to the fourth shade is a structure of two disconnected se-

mitones. It is called tonic, $12 + 12 + 36 = 60$, semitone, semitone, trisemitone. The fifth consists of a semitone, an interval of three dieseis and one of five. It is called malakon diatonic, $12 + 18 + 30 = 60$.¹ The sixth shade has a semitone, a tone and a tone. It is called syntonon diatonic, $12 + 24 + 24 = 60$ or $24 + 24 + 12 = 60$.^b

268. As we consider the seven intervals of the diatonic scale as tones, we are able to use six of their semitones and thus produce many scales which are representative of the shades. To do this, let us assume that the diatonic scale is the basis and let us call the scales that can possibly derive from it, shades.

269. When on each note of the scale is done one alteration, let us call it an one-unit-alteration. When the alteration is done on two notes, let us call it a two-unit-alteration; when on three notes, a three-unit-alteration; when on four notes, a four-unit-alteration; when on five notes, a five-unit-alteration; and when on six notes, a six-unit-alteration.

270. Let us make the proslambanomenos and the eighth higher note--the mese--the two extreme fixed notes--no matter whether they lie on a tone or a semitone--and let us make all the inbetween notes movable, depending on the need. Although it is possible to produce out of one tone two dieseis or two hyptheseis, it is impossible to put both in the scale of one diapason, because then, the diapason will include eight intervals, which is absurd.²

¹Close to this shade is our diatonic genus.

²This is absurd for us and the Ottomans for the reason given in (59). It is though possible and usual among the Europeans, because they can fill in the diapason system with up to twelve intervals.

CHAPTER IX

The amount of possible shades

271. Let us assume that the proslambanomenos of the diatonic scale pa bou ga di ke zo ne, does not become diesis or hypthesis and the remaining six notes become both. With the one-unit-alteration it is possible to produce out of this scale twelve shades,¹ by moving the notes into dieseis or hypheseis:

pa / ga di ke zo ne. ²	pa / ga di ke zo ne. ³
pa bou / di ke zo ne. ⁴	pa bou / di ke zo ne. ⁵
pa bou ga / ke zo ne. ⁶	pa bou ga / ke zo ne. ⁷
pa bou ga di / zo ne. ⁸	pa bou ga di / zo ne. ⁹
pa bou ga di ke / ne. ¹⁰	pa bou ga di ke / ne. ¹¹
pa bou ga di ke zo / . ¹²	pa bou ga di ke zo / . ¹³

¹If alteration signified diesis only, then / = 1. Since, however, it signifies both diesis and hypthesis, it equals 2. Moreover, since the notes on which these are applied are six, $2 \cdot 6 = 12$.

The makams of the Ottomans consist mostly of the scales. We note therefore, these few scales and the names of the makams.

²When this scale produces chant, it is called makam kurdi.

³This is called busselik.

⁴This cazkar.

⁵This hicaz.

⁶This sebah.

⁷This hisar.

⁸This huzzam.

⁹This evic.

¹⁰This acem.

¹¹This mahur

¹²This zivil.

¹³This sehnaz. The protopsaltes Panagiotes Chala-tzoglou composed the heirmos "Ερηξεν ὁ ἄν" on the scale (10).

272. With the two-unit-alteration, when two notes of the scale move into dieseis and hypheiseis, sixty shades are produced,¹⁴ eight of which are listed here:

pa ♪ ga di ke zo ♪. ¹⁵	pa ∕ ga di ke zo ∕. ¹⁶
pa ♪ ga di ke ♪ ne. ¹⁷	pa ∕ ga ∕ ke zo ne. ¹⁸
pa ♪ ∕ di ke zo ne. ¹⁹	pa ∕ ∕ di ke zo ne. ²⁰
pa bou ∕ di ke zo ∕. ²¹	pa bou ga ∕ ke ♪ ne. ²²

In a similar way are produced the remaining scales, up to sixty.

273. With the three-unit-alteration, 160 shades are produced,²³ four of which are listed here:

pa ∕ ♪ di ke ♪ ne. ²⁴	pa ♪ ga ♪ ke ♪ ne. ²⁵
pa bou ∕ di ke ♪ ∕. ²⁶	pa bou ♪ di ♪ zo ∕. ²⁷

¹⁴Since the alteration signs are two and each is taken twice, the two together = 2 . 2 = 4. Moreover, since the notes on which the two-unit-alteration is applied are six, (6 . 5) : 2 = 15. And 15 . 4 = 60.

¹⁵This is called zivil kurdi. ¹⁶This sehnaz busselik.

¹⁷This acem asiran. An example of this is a doxology by the teacher Chourmouzios in the echos barys, ♪ ne pa ♪ ga di ke ♪.

¹⁸Hisar busselik ¹⁹The-scale of the second plagal.

²⁰Nisavereki ²¹Perfect sehnaz.

²²Arezbar. Here the zo hypthesis is the zo barys, obtained from the wheel in descent, which is a semitone lower than the zo of the diapason.

²³Since the alteration signs are three and each = 2, the three = 2 . 2 . 2 = 8. Moreover, since the notes on which the three-unit-alteration is applied are six,

$$\frac{6}{5} \cdot \frac{5}{2} \cdot \frac{4}{3} = 20; \text{ and } 8 \cdot 20 = 160.$$

²⁴This is called nissabur ²⁵subuleh

²⁶Humayyun ²⁷Karcihar.

In the same manner are produced the remaining scales with the three-unit-alteration, up to 160.

274. With the four-unit-alteration 240 shades are generated.²⁸ With the five-unit-alteration 192 shades are generated.²⁹ With the six-unit alteration 46 shades are produced.³⁰ To sum up, when the pa is proslambanomenos, the shades that are possibly produced out of the diatonic scale of the diapason are 728.³¹

275. When it is assumed that the proslambanomenos is on a semitone, then, only two scales--the ones that have all their notes hyphe-seis or dieseis--are not included in the 728. Since, however, there does not exist any melody whose scale has the proslambanomenos on a semitone and which has not at least one tone in the entire diapason, we do not make any mention of them. Further, when the pa is not proslambanomenos, two more shades are produced from each tone, one with the pa hyphe-sis, the other with the pa diesis. As the proslambanomenoi that can possibly have the pa diesis and hyphe-sis are six, twelve more shades are produced. To con-

²⁸Since the alteration signs are four, they are, according with the above, equal to $2 \cdot 2 \cdot 2 \cdot 2 = 16$. Moreover, since the notes on which the four-unit-alteration is applied are six, $\frac{6}{1} \cdot \frac{5}{2} \cdot \frac{4}{3} \cdot \frac{3}{4} = 15$ and $15 \cdot 16 = 240$.

²⁹Since the alteration signs are five, they are equal to $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$. Moreover, since the five-unit-alteration of the six notes is

$$\frac{6}{1} \cdot \frac{5}{2} \cdot \frac{4}{3} \cdot \frac{3}{4} \cdot \frac{2}{5} = 6, \text{ then } 32 \cdot 6 = 192.$$

³⁰The alteration signs being six, they are equal to $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 64$. Moreover, since no other tone remains besides the proslambanomenos, there is no augmentation of the shades with the six-unit-alteration, because $\frac{6}{1} \cdot \frac{5}{2} \cdot \frac{4}{3} \cdot \frac{3}{4} \cdot \frac{2}{5} \cdot \frac{1}{6} = 1$. If now we multiply 64 by 1, we get 64.

³¹Because $12 + 60 + 160 + 240 + 192 + 64 = 728$.

clude, out of one diatonic scale of the diapason, it is possible to derive 740 shades.

276. You can find out which shade each given scale refers to, by making the pa--if it is not on a semitone--proslambanomenos. For example, the scale ke ♩ ♩ pa bou ♩ di refers to the shade pa bou ♩ di ke ♩ ♩ ; the di ke ♩ ♩ pa ♩ ga refers to the pa ♩ ga di ke ♩ ♩ . etc.

277. It is considered reasonable that the ecclesiastical musicians use one of these shades as scale, when they compose, as long as they give evidence that before them some other ecclesiastical musician made use of the same shade too in some psalmody and as long as they keep close to one of the eight echoi. Daniel, for example, used the shade zo ne pa bou ♩ di ♩ in the doxology he composed, but the same shade was also used by Bala-sios and Peter the Glykys in the calophonic heirmoi. Moreover, Daniel kept close to the echos barys.

FOURTH BOOK

CHAPTER I

Concerning the echos.^a

278. Sound is noise emitted from living and lifeless bodies.¹ Noise is the state of air when stricken.² Noise is the most primitive and general of what is audible. It is created from the motion of the air, which is caused by the stroke of the noise-producing body. This body need not move entire, but its particles only might vibrate, tremble or move. There are three things to be observed about noise: the noise-producing body stricken, the air put into motion by it and the sense of hearing hit by the air which is thus moving.

279. Depending on the various kinds of vibrations of the noise-producers, the air, waving in different ways, creates different distinct noises, each named with its

¹This definition is by Aristotle. Sound (echos) is also called eche poetically. Echo is the resounding of the vociferation. The musicians in general, are very much interested in this echo.

The archimandrite Anthimos Gazes defines sound as follows: "Sound is a waving motion of the air produced by the shaking motion of the parts of a body. Such a motion is the result of some attack. These waves or vibrations of the air, hitting at the tympanum of our ears, inflict in our souls a feeling through the nerves."

²This definition is by Claudius Ptolemaeos. Aristotle defines noise as follows: "Noise is the motion of that which is able to move the way that prominent particles move away from smooth ones, when stricken."

proper word: echo, warble, buzz, knock, bray, purl, brawl, stroke, din, clank, clash, shriek, roar, wail, voice,³ sigh, speech, whisper, thunder, hiss, rustle, bellow, howl, row, gnash, bark, howl, neigh.

280. The musicians, having observed the ways these sounds are emitted, have at times, imitated them with great effectiveness. For example, in the heirmos "Ἐν θυμῷ κατεστρωμενὸν" at the word ἁμαρτίαν(sin), Peter the Glykys imitates the braying very becomingly. Daniel too, in the "Μνησθῆναι δέον οὐκ ἔστιν" at the word στεναγμόν(sigh) repeats many times the "ah!" Peter the Iaccedaemonian in the "Νέους εὐσεβεῖς" at the word διασφυζόν(hissing) imitates the hissing. There are numerous other such imitations by others too.

281. To the musicians in particular, echos is a systematic scale upon which a melody is worked out by proceeding in a predetermined way. Echos, in other words, is the scale of a system on which the musicians make the melody by advancing on a predetermined way, that is, by starting with a specified note, delaying on specified notes, keeping specified intervals and ending on specified notes. The definition was formulated by the ancient musicians.

282. Echos is plan of melody based on the practice of knowing which among the notes to leave and which to disregard, which to start with and which to end on.⁴

283. What in old times was called tropos, eidos, schema or tone, differs little, if any, from our echos.

³"Sound^b is a stroke in the air, which, at a certain time, reaches the soul through the ears, that send it forward through certain paths until it is spread in the liver." Plato Tim. p. 21.

⁴Aristides calls this petteia.^c He says too that the notes are left because every melody has limited extremes in ascent and descent.

It was called tropos (mode) because it supposedly revealed the ethos of the chant's mentality. The tropoi were created by preserving the same sizes of the systems and number of intervals and by altering only the order and the compositions. In the tetrachord system there were three tropoi.⁵ In the pentachord there were four tropoi.⁶ In the diapason there were seven tropoi.⁷

284. In order to explain with an example the tropoi of the diapason, let us call our minimum tone, a semitone. In this system of the diatonic genus, first tropos was the one whose semitone was first in descent and

⁵The tropoi were based on the relation that the semitones had to the tones. Eucleides, therefore, calls first, the tropos of the diatessaron system whose semitone lies in descent first of all the tones of the system, like ga bou pa ne. Second, he calls the tropos whose semitone lies second among the tones in descent, like di ga bou pa. Third, he calls the one whose semitone lies third among the tones in descent, like ke di ga bou, or else said, first in ascent, like bou ga di ke. The tropoi of the diatessaron system are the same in the two other genera as well.

⁶In order to examine the modes of the diapente system in the chromatic and enharmonic genera, we have to consider the trisemitone or the two-tone as a tone. In this system, therefore, first tropos was the one whose tone was first in ascent, ♭ di ke zo. Second was the one whose tone was second in ascent, pa ♭ di ke. Third was the one whose tone was third in ascent, ne pa ♭ di. Fourth was the one whose tone was fourth in ascent, zo ne pa ♭.

⁷Eucleides, who claims that the tropoi were seven, produces them as shown above. Others, however, have augmented their number and enumerate up to fifteen. These fifteen tropoi are listed in classes, the signs of each being given as well. According to Eucleides they are: lydian, hypolydian, hyperlydian, aeolian, hypoeolian, hyperaeolian, phrygian, hypophrygian, hyperphrygian, ionic, hypoionic, hyperionic, dorian, hypodorian, hyperdorian.

Each of them has the proslambanomenos that befalls it in the diapason. This is afixed to them in all three genera.

fourth in ascent, like Ga bou pa ne zo ke di ga. It was called mixolydian.

Second was called the tropos whose semitone was third in descent and first in ascent, like bou ga di ke zo ne pa bou. It was called lydian.

Third was the one whose semitone was second in both directions, like pa bou ga di ke zo ne Pa. It was called phrygian.

Fourth was the tropos whose semitone was first in descent and third in ascent, like ne pa bou ga di ke zo Ne. It was called dorian.

Fifth was the tropos whose semitone was fourth in descent and first in ascent, like zo ne pa bou ga di ke Zo. It was called hypolydian.

Sixth was the tropos whose semitone was third in descent and second in ascent, like ke zo ne pa bou ga di Ke. It was called hypophrygian.

Seventh, finally, was called the tropos whose semitone was second in descent and third in ascent, like di ke zo ne pa bou ga Di. It was called hypodorian.

CHAPTER II

Concerning the eight echoi as stated by Manouel

Bryennyos

285. The eight echoi of melody are not arranged by chance on the instrument. Instead, each got a specific location which characterizes the different species of melody, because the echoi differ with each other with regard to nothing else but to the height or lowness that they are located in the vocal register or on the instrument.

286. First and highest species of melody is the one that substitutes the hypermixolydian tone. This is called by the chant-makers first echos.

Ke di ga bou pa ne zo Ke.

287. Second melodic species is the one which substitutes the mixolydian tone. This is called by the chant-makers second echos.

Di ga bou pa ne zo ke di.

288. Third melodic species is the one which substitutes the lydian tone. This is called by the chant-makers third echos.

Ga bou pa ne zo ke di ga.

289. Fourth melodic species is the one which substitutes the phrygian tone. This is called by the chant-makers fourth echos.

bou pa ne zo ke di ga Bou.

290. Fifth melodic species is the one which substitutes the dorian tone. This is called by the chant-makers first plagal echos.

The Bisdiapason System					nete hyporbolaeon	tone
Hypermixolydian Ke					mixolydian nete	tone
Mixolydian Di					lydian nete	tone
Lydian Ga					phrygian nete	semitone
Phrygian Bou					diezeugmenon	tone
Pa					paranete	tone
Ne					diezeugmenon	tone
Zo					trite	semitone
Ke					diezeugmenon	tone
Di					paramese	tone
Ga					mese	tone
Dorian Bou					lichanos	tone
Hypolydian Pa					meson	tone
Hypophrygian Na					pathypate	tone
Hypodorian Zo					meson	semitone
The common tetrachords of the eight echoi					hypate	tone
Hypolydian Pa					meson	tone
Hypophrygian Na					lichanos	tone
Hypodorian Zo					hypaton	tone
The eight echoi					pathypate	semitone
Hypolydian Pa					hypaton	tone
Hypophrygian Na					hypate	semitone
Hypodorian Zo					hypaton	tone
The eight echoi					proslambanomenos	tone

pa bou ga di ke zo ne Pa.

291. Sixth melodic species is the one which substitutes the hypolydian tone. It is called by the chant-makers second plagal echos.

ne pa bou ga di ke zo Ne.

292. Seventh melodic species is the one which substitutes the hypophrygian tone. It is called by the chant-makers echos barys.

zo ne pa bou ga di ke Zo.

293. Eighth melodic species is the one that substitutes the hypodorian tone. It is called by the chant-makers fourth plagal echos.

294. The author explains why one echos was called first, the other second etc. on a double ground: When the chant-makers have in view the higher or lower chant, they call one echos first, the other second, up to the eighth, followign the arithmetical progression. When they have in view the notes of the tetrachord system by which they distinguish which melodic species is higher and which is lower, then, they name the echoi based not on the order of the lower and higher chant, but on the order of the notes in the tetrachord systems, as the highest note in every tetrachord system is called first and the lowest fourth, {ke di ga bou }

{ ٤ ٣ ٢ ١ }

295. Every echos contains seven intervals and eight notes, the first higher of which is called nete, the fourth lower mese, the seventh lower hypate and the eighth proslambanomenos.

296. Every echos starting from its mese, if it is directed towards high pitch, stops compulsorily when it reaches its nete. If it is directed towards low pitch, it stops at the proslambanomenos, because no echos ascends above the nete or descends below the proslambanomenos. If it does, it either perverts itself, or it

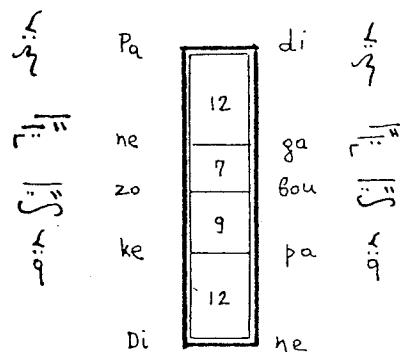
is conveyed to some other higher or lower echos.

297. Of what is mentioned by this author, it is deduced that the eight echoi were defined upon the diatonic genus of the melody and that the transposition from one genus to another, does not change the echos. Consequently, every melody of the chromatic genus belongs to one of the eight echoi mentioned and the same holds for the enharmonic, the mixed etc. genera.



CHAPTER III

Concerning the eight echoi according to the psalmodists

298. The ecclesiastical musicians constructed the four echoi on the four notes of a pentachord, whose first note was a major tone, its second minor, its third minimum and its fourth major again, as shown at the plate.



When they wanted, therefore, to find the first echos, they intoned a note at the distance of a major tone in ascent, which was the annanes. When they wanted to find the second, they intoned a note at the distance of a major and a minor

tones in ascent, which was the neanes.¹ When they wanted to find the third echos, they intoned a note at the distance of a major, a minor and a minimum tones in ascent, which was the nana. When they wanted to find the fourth, they intoned a note at the distance of a major, a minor, a minimum and a major tones in ascent, which was the agia. This becomes obvious from the martyriæ too, as the  shows two tones, the  three tones,

¹This neanes differs from the chromatic neanes as regards the quality of melody, because of the intervals. Because, whereas the chromatic requires in ascent the intervals minimum and major tones, the diatonic requires a major and a minor tones.

the ᾠ four tones because of the superscribed hypsele. Manouel Chrysaphes says in relation to this: "If you go one step above the first echos, you always find the second, if two steps, you find the third and if three steps, you find the fourth."

299. The four authentic echoi were constructed on the pentachord mentioned, the notes of which were considered with direction from low to high pitch. When the notes were considered with direction from high to low pitch, four more echoi were derived, which were called plagals. The high tetrachord, therefore, of the scale ᾠ ᾡ ᾢ ᾣ ᾤ ᾥ ᾧ ᾨ which consists of two similar tetrachords, contains the authentic echoi, though the

Second		ᾠ
First	9	ᾡ
	12	
Fourth	12	ᾢ
	7	
Third	7	ᾣ
B' Plagal	9	ᾤ
	12	
D' Plagal	12	ᾥ
	7	
Barys	7	ᾧ

low tetrachord contains the plagal echoi. Indeed, the wheel was made with eight spokes so that it might contain as many notes as there are echoi. Consequently, every plagal echos stands a descending interval of four tones apart from its authentic. If one then, wants to find the plagal of an authentic echos naturally, he descends four tones by singing five notes and the fifth will represent the

plagal echos wanted.

300. It was called plagal echos, Bryennyos says, because its mese lies by the hypate of the authentic, as it becomes obvious on the diagram drawn above. Rather, it was called plagal because from this mese, the meldoy starts to bend and to proceed towards the lower location of sound. To sum up, it is property of the au-

thentic echoi to comprise the higher location of sound, though property of the plagals is to comprise the low location of sound.²

²The equivalent of our plagal was for the Ancient Greeks the hypo. In relation to this, Athenaeos says that the musicians, having seen the amount and simulation of beauty and virtue of the harmony's ethe, called it hypodoric as they call hypoleukon what resembles the white and hypoglyky what is not sweet, but nearly so. Therefore, they called hypodorian what is not completely dorian.

CHAPTER IV

Concerning the constituents of the echoi

301. The constituents of the echoi are four: the intonation formula, the scale, the dominant notes and the cadences. The points of recognition are two: the intonation formula and the cadences, because the echos is recognized right away with the intonation formula or the cadence of some verse chanted before.

302. Some of the cadences are final, some perfect and some imperfect. Final cadences are the ones that carry a melody which belongs to the end of the troparion or any other chant. Perfect cadences are the ones that carry a melody which belongs to the end of the periods in the middle of a troparion or any other chant. They occur, in other words, there where the meaning is completed and a full stop is written by the grammaticians, although there follow still more words for the conclusion of the entire troparion or chant. Imperfect cadences are the ones that carry a melody belonging to the ends of the clauses or their fractions in the middle of the troparion, where there is no conclusion of the meaning and the grammaticians write semi-colon or comma. These cadences, occurring on notes other than the ison of the echos, are called imperfect, because the ison is considered the start of every melody and it seems that the ear desires to sense that the melody returns back to it. Because once the sense of hearing is predisposed in favour of a start, the cadence that occurs elsewhere, leaves it as if in suspense. It is for this reason that

when the cadences of many places or even of entire troparia are imperfect, it becomes indispensable that the last place or last troparion takes a perfect cadence. 303. Ison of the echos is called the basis on which each echos starts. If it is, therefore, assumed that the first echos has ison the note ke, the first plagal will have ison the note pa. If we next assume that the second echos has ison the note zo, its plagal will have ison the note bou. In like manner, if it is assumed that the third echos has ison the note ga, the echos barys will have ison the zo below it. If, finally, it is assumed that the fourth echos has ison the note di, its plagal will have ison the ne. If now in the different chants other isa are given to the authentic modes, it is difficult to adapt on the diapason the finding of every plagal mode's ison four notes below the ison of its authentic, because the diapason system contains seven notes, while the echoi are eight (299).

304. Dominant notes are those whose quality affects the echos (239). Transgressive are the notes whose quality is entirely ineffective to the echos. Since each echos has two or three dominant notes each of which has its own quality, it is necessary that another quality, an ethos, is derived out of the two or three qualities. In other words, dominant notes are the ones around which the echos enjoys to dwell. Transgressive are the ones with which the echos has no particular attachment, but it either silences them completely or gets away from them rapidly, while it temporizes mostly on the dominants.¹

¹"The harmony (echos) ought to have kind of pathos or ethos. Who cannot observe the differences in these species, is to be contemptible; who follows the pitches of the notes and puts an hypermixolydian harmony and above it some other." Athen. Deipnos.

305. Neither one echos is complete with one scale only--because one echos requires often various scales--nor one scale alone belongs to one echos--because often, many scales refer to one echos only. This is so because the psalmodists use to include in the eight echoi the shades listed earlier and alteration signs were assigned to indicate fully those among the shades that are in use.






306. It is common to all eight echoi to derive from the authentic and the plagal, the four mid-echoi, so called because they are in the middle between the authentic and the plagals. Mid-echos of the ᾠ , the first echos, is the ᾠ or third as it is in the mid of the ᾠ and the ᾠ . Mid-echos of the ᾠ , the second, is the ᾠ . Mid-echos of the ᾠ , the third, is the ᾠ . Mid-echos of the ᾠ , the fourth, is the ᾠ or legetos.

CHAPTER V

Concerning the intonation formulae

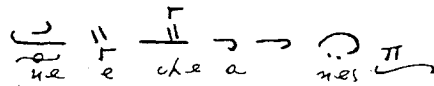
307. Intonation formula (apechema) is the preparation of the psalmody to be chanted and is realized with one of the polysyllable notes (66). The same thing is also called enechema.¹

Before beginning to chant any melody, we sing one of the polysyllable notes, so that we touch on the melody when the echos is already known. If there is a verse preluding the troparion, this performs the role of the intonation formula and should cadence like it.

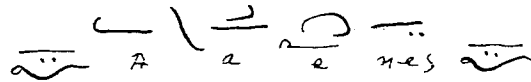
308. When before the melody is written the martyria of the echos only, the intonation formula cadences on the ison of the echos (303). In the case, however, that the melody's start is written two tones higher, like , three tones, like , or four, like , etc.--as next to the martyriae are written the neumes that indicate these intervals--, the intonation formula should cadence upon the note a second, third or fourth higher, whatever is notated. Therefore, the plagal of the first echos has the intonation formula aneanes, when it ends on the pa and its martyria is  . When the martyria though is , the intonation formula will be the annanes or the preluding verse ending on the ke, because the melody starts on a

¹Enechema is the imposition of the echos. The apechema might be also done with monosyllable notes, but the beginners receive elementary knowledge with the polysyllables, because of the quality.

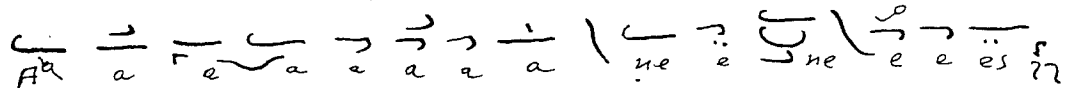
It is written and sung by us in the following way:



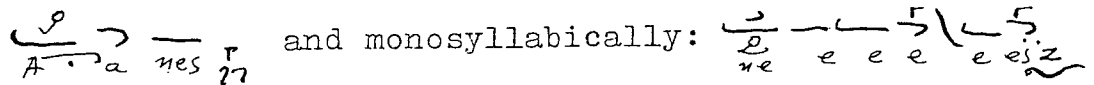
315. The intonation formula of the echos barys was written by the ancient psalmodists:



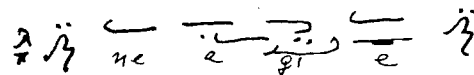
the melody of which turns out to be, through the tradition of notation, as it is here exposed:



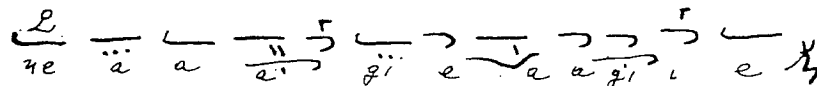
It is written and sung by us in the following two ways. In which case is made use of one way and in which of the other, will become obvious at paragraph (358).



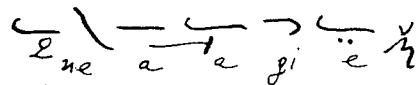
316. The intonation formula of the fourth's plagal was written by the ancient psalmodists:



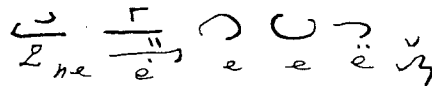
What is thus written, carries the melody written below:



The intonation formula of this echos is sung and written by us with polysyllables:



and with monosyllables:



Both, however, serve the same purpose.

317. The echoi of the psalmody are eight. The intonation formulae preserved though, are ten, because the fourth echos and the plagal of the second have two intonation formulae each. The second intonation formula of the fourth echos was written by the ancient psalmodists:



Interpreted with our notation, it carries the melody written below:

$$\int_{Le}^{\infty} \frac{1}{e} d\tau = \int_{Le}^{\infty} \frac{1}{e} d\tau = \frac{1}{e} \left[\tau \right]_{Le}^{\infty} = \frac{1}{e} (\infty - Le) = \frac{\infty}{e}$$

According to Jacob, it is sung and intoned with monosyllable notes:

$\frac{2}{\lambda} \cdot \frac{1}{e} \rightarrow \rightarrow \rightarrow \rightarrow - \frac{5}{e} - \frac{1}{e} \rightarrow$

The second intonation formula of the plagal of the second echos was written by the ancient psalmodists:

$\pi \rightarrow \bar{n} e \quad \bar{n} \mu \quad \bar{n} \tau$

This carries the following melody when interpreted with our notation:

$\frac{1}{n_2} - \frac{1}{a} - \frac{1}{a} - \frac{1}{n_0} - \frac{1}{\sigma} - \frac{1}{\sigma} - \frac{1}{\sigma} - \frac{1}{\sigma} - \frac{1}{\sigma} - \frac{1}{\sigma}$

A more brief way to write the $\text{nenan}\bar{o}$, which is also more handy, is:

$$\text{C} \quad || \quad \text{---} \quad \text{---} \quad \Delta$$

$$ne \quad e \quad ne \quad n\bar{o} \quad o$$

You should know, however, that the melody of the intonation formulae might be differently expressed too and that there are intonation formulae done in other ways. Nevertheless, the preparation of the echos takes place always.

CHAPTER VI

Concerning the first echos

318. The ecclesiastical musicians called first, the echos whose intonation formula is done with the annanes. If this word is not said entire, the intoned nes indicates ascent of a major tone and the quality of the annanes. Its ison is the note ke in the sticherarion and the pa in the papadike.

319. It was called first echos because its intonation formula consisted of a major tone, which was the first tone to be found, because if we look at the diatonic notes of the diapason system for the harmonic relation 6, 8, 9, 12 and if the 6 is put on the di, the 8 will be on the ne, the 9 on the pa and the 12 on the Di, like:

6	8, 9	12
---	------	----

di ke zo ne pa bou ga Di

Therefore, it was not the minor or the minimum tones that were first known to the harmonists, but the major, the tone that has the ratio of 1/8. So, the Pythagoreans, believing that the note pa is the first to be pronounced, called it trophos (nursing).¹

320. The first echos makes use of a diatonic scale, in

¹"Among the numbers 5, 13 and 35, the Pythagoreans called the 5 trophos, that is trophos note, believing that the first tonal interval to be pronounced was the fifth. The 13 they called leimma, realizing that it divides the tone into equal parts. The 35 they called harmony because it is obtained both with the two cubes a' of one even and one odd number and with the four numbers 6, 8, 9 and 12 which contain the arithmetic and harmonic analogies." Plutarch.

most cases on the wheel, which is as follows:

ne, pa bou ga di, ke zo ne Pa.

Therefore, it calls for the two tetrachords to be similar; the interval pa-bou, that is to be equal to the ke-zo, the bou-ga equal to the zo-ne and the ga-di equal to the ne-Pa. The note ne stands as proslambanomenos in the scale and contributes to the completion of the pentachord ne pa bou ga di and to the measurement of the tonic interval ne-pa, which is equal to the di-ke, as the note di is considered to be the proslambanomenos of the pentachord di ke zo ne Pa. If further ascent is required, considering the Pa as proslambanomenos, we form another similar higher tetrachord. The analogous is done when further descent is required.

321. Dominant notes in the first echos, when the chant is argosyntheton (slow), are the pa and the ga or the ke and the ne. Transgressive notes are all the rest. When the chant is gorgosyntheton (fast), dominant notes are the pa and the di and transgressive all the rest. Sign of the phthora of the first echos is the π which is put on the ke. When, however, it is transposed upon another note, this note should abandon its own sound and, instead, pronounce the ke and give the quality of the annanes, so that the parallage of the remaining chant will be done as if it starts with the ke.

322. The imperfect cadences in the first echos are done on the notes ga and di, the perfect on the pa and the ke and the final on the pa. On every cadence is put a martyria. On the note ke is put the martyria κ , on the di the λ , on the ga the η , on the bou the χ , on the pa the ϕ , on the ne the ν , on the zo of the wheel system the ξ , though on that of the diapason the ζ , on the ke of the wheel the α , though on that of the diapason the η , on the di of the wheel the θ , though on that of the diapason the λ . In the

same way are formed the remaining martyriæ as they appear in the diagram.^a

323. The first echos starts a major tone higher from the buzz (every note might be considered as the buzz), four tones higher from its plagal and the plagal of the second echos or its ison. It starts two tones higher from the third echos and the echos barys, three tones higher, or one minor tone lower, from the fourth that ends on the bou, one major tone, or five tones--depending on our need--higher from the fourth plagal. In some circumstances though, some of these are breached.

324. The ethos of the first echos preserves character which is either modest and dignified or grandiose and majestic. If this echos is identified with the ancient dorian, Plato considered that its modesty is proper to the perfection of the ethos and, disregarding the rest dialects of the echoi, judged that the dorian fits to men that are good warriors and moderate persons, because this dialect appeared to him able to strengthen the soul of the wise and moderate the soul of the foolish.² In the Octoechos were found the following verses:

Wondering at your sounds
The art of musical composition
Puts you, oh value, first in order.
Being called the first echos
Of the musical art,
We use first, the First
To bless the holy texts!
You are assigned to bring us
The first and the best.
The first prizes of all the victories
Are yours everywhere.

²"The doric harmony (mode) shows the masculine and the grandiose and not the relaxed and the merry, but the sad and the active. Moreover, it is not embellished or varied." Athen. Deipnos.

Concerning the dorian mode, see (284). In the related with music manuscripts preserved, it is said that the first echos was called dorian by the Ancient Greeks. It got its name from the Doric people, because they are the first people known to have used it. It was in-

325. The martyriae of the diatonic genus in the diapason.

Δ'	Γ'	Θ'	Π'	Υ'	Σ'	Ψ'	Δ	Γ	Θ	Π	Υ	Σ	Ψ	Δ
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$

The martyriae of the diatonic genus in the wheel.

The phthorae of the diatonic genus.

$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

vented, it is said by Thamyras from Thrace and was used in all three genera. However, we use it in the diatonic genus only, since the tones of our diatonic scale are fixed.

Aristophanes claims that the Dorian harmony (mode) is most often, the only harmony that fits to the lyre. He does not consider any other. Plutarch says that the dorian dialect renders the grandiose and dignified and the lydian the pathetic. Gallenos reports about the dorian the following: "The musician Damon, being present in a group playing the aulos, where some drunk youngsters were playing in the phrygian mode and were acting as if they were close to madness, ordered them to play in the dorian and they immediately stopped the mad behaviour." Concerning the ideas of Hippocrates and Plato.

Basil the Great also, in his advice to the young, tells the following about the dorian mode: "It is said that Pythagoras coming across a merry group of drunkards, ordered the aulos-player, the leader of the group, to alter the harmony and play on the dorian mode for them. They came so successfully back to their senses, that they threw the crowns of leaves off their heads and disappeared in shame."

CHAPTER VII

Concerning the second echos

326. The ecclesiastical musicians called second the echos whose intonation formula is done with the neanes, which indicates an ascending minimum and a major tones. If this word is not pronounced entire, then the intoned nes indicates the quality of the neanes. Its ison is the note bou. Because of the similarity in the two-tone intervals, it can also have as ison the di and the ne.

327. It was called second echos, because if we ascend two tones, one major and one minor, from the buzz from which by ascending a major tone we find the ison of the first echos, we find the ison of the second. Consequently, the ison of the second echos is a minor tone higher than the ison of the first echos. This is so when the first echos has as ison the pa. If it has as ison the ke, the second will have ison the di, which is a more natural ison, since the diatonic scale gives its intonation formula with the intervals bou-ga and ga-di.





328. The second echos makes use of a chromatic scale which proceeds on two-tone similar intervals, as follows: Starting on the note di, we find the interval di-ga to be a major tone and the ga-bou a minimum tone etc. as said in (244) so that such a scale is constructed:









ne ♪ bou ga, di ♪ zo Ne.

It often though applies the scale of (245):

pa ♪ / di, ke ♪ / Pa.

329. Dominant notes in the first scale of the second echos are the bou and the di. The signs of the phthorae

of the second echos are two, the  and the . The  is put on the notes di, bou, ne and so on, on all the notes that come on every two-tone interval. The  is put on the notes ke, ga, pa and so on, on all the notes that come on every two-tone interval. When the phthorae are transposed upon some other note, this note should abandon its own sound, as the note to be pronounced should be the one indicated by the phthora and it is the quality of this note that should be given. Moreover, the parallage of the remaining chant should be done on the image of this phthora. The dominant notes of the other scale are discussed in the chapter concerning the plagal of the second echos.

330. The imperfect cadences in the second echos are done on the bou, the perfect on the di and the final on the di and rarely on the bou. In the same echos the martyria sign of the note Ne is the , of the pa the , of the bou the , of the ga the , of the di the , of the ke the , of the zo the , of the ne the  and so on.^a

331. The intonation formula of the second echos starts on the bou if it ends on the di, but on the ne if it ends on the bou. The interval bou-pa is a major tone and the pa-ne a minimum tone. This ne, therefore, is a little higher than the diatonic ne. The second echos itself starts with the bou or the di. When it is transferred from the first echos, it starts naturally a minor tone higher and transposed on its ison. In like manner, when transferred from the fourth which ends on the bou, it starts on its ison. When transferred from the first, second and fourth plagals, it starts a fourth higher. When transferred from the third and the echos barys, it starts a second higher.^a

332. If this echos corresponds to the one that in an-

cient times was called lydian,¹ its ethos has a character which animates and encourages but also grieves and instills passion into the souls. This echos seemed to lean towards delicacy and to drive the soul to cowardice. Therefore, it is said that Orpheus was taming the wild beasts with this echos. Plato calls the lydian mode proper to drinking parties and unrestrained and he disregards it, because it makes the souls of the young vain. In the Octoechos we find these verses expressing its ethos:

Although you were given the second place,
Your pleasure is first, honey-pouring echos.
Your honey-flavoured, most sweet chant
Builds up the bones, gives joy to the hearts.
The Sirens sung all their chants on the second.
So mildly does your honey-pouring chant flows.

¹Some say that Amphion invented the lydian mode, though others say that it was Olympos first who played on the aulos a funeral on the lydian mode at Pytho. Pindar says in his paeons that the lydian music was first played in public in the marriage of Niobe. Dionysos the Iambos tells us that Torebos was the first to use lydian music. Nicolaos the Damascenos says that the son of Zeus and Torrhebia, wandering by some lake--which has been called Torrhebia because of him--heard the singing of the nymphs, whom the Lydians called muses, learned their music and taught their songs to the Lydians.

CHAPTER VIII

Concerning the third echos

333. The ecclesiastical musicians called third the echos whose intonation formula is done with the nana, which indicates an ascending tritone, that is an interval containing three tones, a major, a minor and a minimum. When this word is not said entire, the intoned ne requires buzzing and voluminous pronunciation. Its ison is the note ga. In the papadike its ison is the ne above it.

334. It was called third echos, because if we ascend three tones--a major, a minor and a minimum--from the buzz from which by ascending one major tone we find the ison of the first echos, by ascending two tones -- a major and a minimum--we find the ison of the second echos, we find the ison of the third echos. So, the ison of the third echos is a minimum tone higher than the ison of the second and a minor and a minimum tones higher than the ison of the first echos.

335. The third echos makes use of the following enharmonic scale:

pa 6 ga di ke 2 ne Pa.^a

As in this scale there is no minor or minimum tone, but instead, there are five major tones and two quarters of the major tone, it belongs to the diatessaron system, or triphony.

ne pa bou ga, ga di ke Zo

4 9 2705 22, 3 9 2705 22 (261) and (57)

336. Dominant notes in the third echos are the pa, the ga and the ke. Sign of the phthora of the third echos

is the \int . When this is on the ga, it requires that the ga is a natural tone and the remaining ascending and descending intervals of the tones are as determined in the scale of the echos. When this sign is put on the two notes zo and bou, it wants them to be on hyphe-
sis. When put on any other note, it wants this note to leave its own sound and pronounce the ga, creating the quality of the nana, so that the parallage of the remaining chant will be done on the image that this phtho-
ra requires.

337. In the third echos the imperfect cadences are done on the ke, the perfect on the pa and the final on the ga, since, after the third echos starts and points the bou diesis, it turns towards the ke where it makes an imperfect cadence; then, turning towards low pitch, it points at the bou natural and makes a perfect cadence on the pa; finally, turning towards high pitch, it takes the bou diesis and makes a final cadence on the ga; it rarely makes an imperfect cadence on the ne too. The signs of the martyriae in the third echos are the ones assigned to the first echos also, except of the martyria of the Zo, which is written $\frac{z}{\int\int}$ and of the bou three tones above it, which is on hypthesis and its martyria is written $\frac{b}{\int\int}$. The note seven tones below this, is on diesis in the third echos and its martyria is seldom required, because no cadence occurs on it.

338. The intonation formula of the third echos starts with the ne and ends on the ga. The verse preluding this echos starts on the ke and ends on the ga, when the martyria of the troparion is simply $\int\int$ or $\int\int$. When though, an elaphron stands by it, like $\overline{\int\int} \cup \cup$ or $\int\int \cup \cup$, then, the verse ends on the pa. The third echos itself starts on the ga. When it is transferred from the first echos, it starts two tones higher or lower. When it is transferred from the plagals of the first and the second, it starts two tones higher. When it is transferred from the second, it starts one tone higher.

The same happens when it is transferred from the fourth echos that ends on the bou. When it is transferred from the plagal of the fourth, it starts three tones higher and when from the barys, it starts with its ison.

339. If the third echos is the one that the Ancient Greeks called phrygian, its ethos preserves a rough, warm, arrogant, impetuous and horrifying character. For this reason Athenaeos says that the trumpets and war-instruments sounded the phrygian mode. As the verses in the Octoechos illustrate, it also preserves masculinity, elegance and simplicity.

Although you are third, you resemble
The King of manly toil, oh Third.
Inelegant, simple, completely masculine indeed
Your song, oh Third; and we honour you.
Equal to your number your rank as a leader,
You befit to the masses, Third, being ably made.

CHAPTER IX

Concerning the fourth echos

340. The ecclesiastical musicians called fourth the echos whose intonation formula is done with the agia which is often met in many chants written with the musical neumes. In order to create the quality of the agia, it should be chanted with rough and masculine pronunciation. The fourth echos has as ison the notes di, pa and bou.

341. It was called fourth echos because if we ascend four tones from the buzz from which by ascending one major tone we find the ison of the first echos, two tones--a major and a minor--we find the ison of the second echos, three tones--a major, a minor and a minimum--the ison of the third echos, we find the ison of the fourth echos. When, therefore, buzz is the ne, ison of the first echos will be the pa, of the second the bou, of the third the ga and of the fourth the di. When buzz is the di, ison of the first echos will be the ke, of the second the Zo, of the third the Ne and of the fourth the pa. When ison of the first echos is the ke, of the second the di and of the third the ga, then ison of the fourth is found to be the bou.

342. The fourth echos makes use of a diatonic scale on the diapason system. For this reason, when the agia which receives two isa--the pa and the di--has as ison the pa, it descends four tones which have similar intervals with the four tones that descend from the di.

Although there is found no difference between the two isa of the agia in descent, in ascent the difference

is great because of the dissimilarity of the intervals, since, indeed, the interval di-ke differs from the pa-bou, the ke-zo differs from the bou-ga etc. When the fourth echos has as basis, that is as ison, the note bou, then its intonation formula is the legetos. Manouel Bryennyos calls the echos with this ison fourth echos, but the psalmodists after him call it mid-echos of the fourth, because it is in the middle between the di and the ne and they pronounce it legetos, whence the martyria λ^6 used by us.

343. Dominant notes in the fourth echos are the di and the bou when ison is the bou, in which case it is required that the hypthesis of the ke is sometimes heard.

When ison is the pa or the di, dominant notes are the pa, the di and the zo. Signs of this echos' pthorae are the ξ for the note bou, the \backslash for the di and every other sign of the ones defined in the diatonic scale of the diapason (325). It should be known that when two tones higher is heard the chant of the neanes, there is no need of another sign of pthora to indicate this, because basis of the agia is the di. When, though, two tones higher is the nana, then basis of the agia is the pa and to indicate this, the ξ should be put on the first ascending tone or the \backslash on the second etc.

344. When the fourth echos has as ison the bou, the imperfect and perfect cadences are done on the di and the bou and the perfect and final on the bou. When its ison is the di, the imperfect cadences are done on the pa and the zo, though the perfect and final on the di. When its ison is the pa, the imperfect cadences occur on the di and the bou, though the perfect and final on the pa. According to the more recent composers, the final cadences are made on the bou. The signs of the martyriae in this echos are the ones determined for the first echos on the diapason system (325).^a

345. The fourth echos which has the ison on the pa, starts with the note pa, on which the preluding verse ends. When its ison is the bou, the preluding verse also ends on the bou. When it is transferred from other echoi, the quantity of ascent or descent it receives, depends on the isa of these echoi.

346. According to the Anastasimatarion of Peter, the fourth echos differs from the first in that the fourth points at the neagie on the fourth ascending tone, which means that it proceeds on the diapason, though the first, which proceeds on the wheel, points the aneanes at the fourth descending tone. Further, they differ as to the dominant notes, because the first has dominants the pa and the ga, though the fourth has the bou and the di. Furthermore, they differ in the cadences, as the first has imperfect cadences on the ga and perfect or final on the pa, though the fourth echos has imperfect cadences on the di, perfect on the pa and final on the bou.

347. The ethos of the fourth echos preserves festive and dancing character. When its ison is the di, its character is dignified and grandiose, when it is the bou it is passionate and sensual and when it is the pa, it is humble and incites the heart to put into motion the spiritual powers. Here is how is expressed its ethos in the Octoechos:¹

You the festive, the dancer, oh Fourth,
You, the pride of musical criticism,

¹If the fourth echos is the one that the Ancient Greeks called mixolydian, it was invented by Sappho. Indeed, before her the musicians knew three modes only, the dorian, the lydian and the phrygian. Taking this mode, the musicians combined it with the dorian, elements of which they transmitted to its ethos.

"The mixolydian is passionate, fitting to tragedy. Aristoxenos said that it was Sappho who found the mixolydian first and that the tragic poets were taught it from her, combining it thereafter with the dorian. As the one renders majesty and dignity and the other passions, tragedy consists of these mixed elements." Plutarch.

You mould the dancers skillfully
And reward the voices and beatings of the cymbals.
The crowds of dancers praise you, oh Fourth,
Because wholly musical you are.

CHAPTER X

Concerning the plagal of the first echos

348. The psalmodists called plagal of the first the echos whose ison is four tones below the ison of the first echos, which means that if the ison of the first echos is on the note ke, ison of the first plagal will be the note pa. Its basis or ison should be such that it will permit the echos to ascend freely seven tones and to point at the first echos four tones higher. Such a note is the pa which is the ison of this echos in the papadik and the sticherarika. The heirmologika require as ison of this echos the ke but with the phthora of the pa, so that the descent is done as if from the pa, because three tones below is the aneanes instead of the necheanes. The intonation formula of this echos is the aneanes, which indicates ascent and descent of two tones --one minor and the other minimum--and which does not need for the measurement of the interval below the pa a proslambanomenos. Instead, measured with the diatonic intervals, it reveals itself.

349. This echos makes use of the diatonic scale on the diapason system. As it often has the zo on hyphesis and because the interval zo-ke is observed to be quarter of the major tone, this echos uses a mixed scale which is composed of the diatonic and the enharmonic genera. The scale is as follows:

pa bou ga di, ke X ne Pa.

The sign of the phthora of the second plagal, when it makes use of the mixed scale, is the X which put upon the zo, wants it on hyphesis. When, however, this echos

makes use of the diatonic scale, then the ρ is put on the pa or one of the signs indicated for the diatonic phthorae (325) is put in its proper place and thus the scale becomes known. We use such a phthora when some alteration occurs, because otherwise it is needless.

350. This echos has dominant notes in the sticherarika and the papadika the pa, the di and the ke. It also wants the hypthesis of the zo to be heard. Dominant notes in the heirmologika it has the ke and the ne. In this case the zo should not be heard so much in hypthesis, but rather, natural. For distinction, when the zo is hypthesis, the sign ρ is put on it.

351. In the sticherarika and the papadika the imperfect cadences are done on the di and the ke, the perfect and final on the pa. In the heirmologika the imperfect cadences are done on the ne, the perfect on the ke and the final on the pa and the ke. When the cadence in the heirmologika is done on the pa, then the closing period descends from the ke naturally and not as if it were descending from the pa. The signs of the martyriai of the first plagal are the ones determined for the first echos on the idapason system. When, however, it makes use of the mixed scale, then it applies the martyriai as indicated in (262).^a

352. The intonation formula of the first plagal starts on the pa and ends on the pa. When transferred from its authentic, the echos itself starts four tones below; when transferred from the third and the echos barys, it starts two tones below; when transferred from the second, it starts one or three tones below; when transferred from the second plagal, it starts with its own ison; when transferred from the fourth which ends on the bou, it starts a tone below; and when transferred from the plagal of the fourth, it starts a tone above.

353. The first plagal differs from the first echos in

that the first ascends from its basis less than the first plagal and descends more. It also differs from the first as to the dominant notes and the imperfect cadences. It differs from the fourth as to the dominant notes and the fact that the fourth likes the hyphe-
 phesis of the ke, though the plagal of the first likes the hyphe-
 phesis of the zo.

354. The ethos of the first plagal in the sticherarika and the papadika inclines towards compassion and lamentation. In the heirmologika in fast tempo, it inclines towards stimulation and dancing. In the heirmologika in slow tempo, towards laxness and languidness.

You are lamentor and very compassionate,
 But often you dance in good rhythm,
 Oh you, the musical mind that art has known.
 Which is the deviating inclination of the
 plagals?

In order you are fifth, but first in your kind,
 because you are and, therefore, you are named
 The first of the plagals.¹

¹Its lamenting quality is exemplified in the "ὦ ζωὴ ἐν ταφῷ" and the "Ἄξιον ἔστι μεγαλύνειν σε". The compassionate is exemplified in the "ὦ ζωτῆρι θεῷ" and the "Χαίρεις δουλτικῶν ἀληθῶς". Its dancing character is demonstrated in the "Πάσχα ἱερὸν ἤριτον σήμερον" in fast tempo. The lax character is demonstrated in the Katabasiae in slow tempo.

CHAPTER XI

Concerning the plagal of the second echos

355. The psalmodists called plagal of the second echos the one whose intonation formula is the necheanes which indicates ascent of a semitone, a trisemitone and another semitone and the same descent. Its basis or ison should be such that it will permit it to ascend freely seven tones and to point at the second echos four, or at times, three tones above it. Such a note is the pa which is the ison of the second plagal in the papadika and the stichera. The heirmologika have the ke or the di as ison of this echos. It is characterized from the chromatic intervals pa-bou and bou-ga and does not require a proslambanomenos for the measurement of the interval below the pa. It is also characterized, as the psalmodists said, with the lying of its authentic on it.

356. Its scale is the following chromatic scale:

pa *♭* *♮* di, ke *♭* *♮* Pa

consisting of two similar chromatic tetrachords. The signs of the phthorae for this scale are two, the *♭* put on the pa and the ke, which regards the ascent and indicates a semitone, a trisemitone and a semitone, as the numbers in the diagram (245) illustrate and the *♮* which is put on the di and the Pa above it. This regards the descent and indicates a semitone, a trisemitone and a semitone as illustrated in (245). It often makes use of the following mixed scale too:

pa *♭* *♮* di, ke zo ne Pa,

but then, on the first tone of the diatonic tetrachord we come across, is put the sign of one of the diatonic phthorae (325) for distinction. In the heirmologika,

however, it applies the chromatic scale we talked about in (328).

357. In the sticherarika and the papadika it has dominant notes the pa, the di and the ke and requires that the ga diesis is heard in order that the di is coloured by it. In the heirmologika its dominant notes are the di and the bou, when ison is the di.

358. Its imperfect cadences are done on the di, its perfect and final on the pa. Sometimes, it also has final cadences on the di, as its intonation formula is very often done with the nenanō, like in the funeral "Ἄγιος ὁ Θεός." In the heirmologika its imperfect and final cadences are done on the di and its final on the bou.

359. The intonation formula of the second plagal echos starts with the pa and ends on the pa when it is neche-anes, but it starts and ends on the di when it is nenanō. This echos, when transferred from its authentic, starts three or four tones below as it does when transferred from the first echos with ison the ke. When transferred from the first plagal and the fourth, including the one ending on λ^{\flat} , it starts on its ison; when transferred from the third and the barys it starts two tones below; when transferred from the fourth plagal, it starts one tone higher.^a

360. It differs from all the other echoi as to the chromatic genus. It differs from the second, as this extends in the high register more and in the low less, though the second extends in the high register less and the low more; still, it differs as to the dominant notes and the perfect cadences, because in the stichera the second does the perfect cadences two tones below the basis, though the second plagal does them on its basis.

361. The ethos of this echos preserves a character suiting to funeral songs and to sacred and elevated celebrations. This holds for the stichera and the papadika.

In the heirmologika, however, where the quality of the neanes is pre-eminent and that of the nenanō is not heard, its character is joyful. Its joy is double the joy of the second, as it becomes evident in these verses:

Though you are the sixth chanter,
First of all you advance.
In double composition you bring all the pleasures
And your being second secondary comes.
You, the honey-flavoured, the sweet, the grass-hoper,
Who loves you not oh second of the plagals?

CHAPTER XII

Concerning the echos barys

362. The psalmodists called barys the plagal echos of the third for reasons that go back to antiquity. It is said that Hermes, inventing a seven-stringed lyre, taught that the notes and the echoi are seven. The lowest of these seven notes was the zo and, therefore, the echos whose ison was the zo was called echos barys. When, later, Pythagoras and his successors augmented the strings and the notes to eight, they did not want to change the name of the echos barys and bring into complete oblivion the ancient kind of lyre. The intonation formula of the barys in the stichera and heirmologika is done this way: $\bar{n} \frac{2}{4} \rightarrow \frac{2}{4e}, \bar{n}$. In the papadika and the calophonic heirmoi it is done thus: $\frac{2}{2ne} \frac{1}{re} \frac{1}{2e} \frac{1}{2e} \searrow \frac{1}{e} \frac{1}{e3} \approx$. The first intonation formula indicates descent and ascent of a quarter of the major tone. The second indicates ascent of a major tone and descent of a major and a minimum. The first intonation formula has as basis the ga and the second starts on the ne and ends on the zo.

363. In the stichera and heirmologika the echos barys has the following enharmonic scale:

pa / ga di ke ρ ne Pa.

which, however, is not that of the third echos, but has the following differences: the interval ke-zo in the third echos is a quarter of a major tone, though in the barys it is a minimum tone.^a In the old sticherarion and the papadike it makes use of the diatonic scale. Nevertheless, around the cadences in the stichera, it approaches the enharmonic scale and in this case, it is

identified with the J put on the ga, the hypthesis of the zo or the bou.

364. In the stichera and heirmologika its dominant notes are the zo, the di and the bou as is evident in the Anastasimatarion of Peter, where this echos is pointing right from the beginning at the diesis of the bou or the hypthesis of the zo. In the old sticherarion and in the papadike, the different dominant notes vary with the different views. When the echos barys proceeds on the enharmonic scale, sign of its phthora is the J put on the ga and on the hypthesis of the zo and the bou. When it proceeds on a diatonic scale, it is the Z put on the zo and any of the signs of the phthorae put on their proper notes, as determined (325).

365. When the echos barys makes use of the enharmonic scale, the imperfect cadences are done on the di and on the ne and rarely on the pa; the perfect and final are done on the ga. When though, it makes use of the diatonic scale, the imperfect cadences are done on the di, the perfect on the pa and the zo and the final on the zo. The signs of martyriæ in this echos are those of the third and first echoi.

366. The intonation formula of the echos barys in the sticherarion and the heirmologion, starts on the ga and ends on the ga. In the papadike and the calophonic heirmologion, it starts on the ne and ends on the zo (362). When transferred from the first echos whose ison is the ke, the barys of the stichera starts two tones below; when transferred from the second and the fourth which ends on the bou, it starts a minimum tone above; when transferred from the first and the second plagal, it starts two tones above; when transferred from the fourth plagal, it starts three tones above and when from the third, it starts with its ison.

367. The difference of the echos barys from the remaining echoi lies on the enharmonic scale. Its difference

from the third lies on the different dominant notes and cadences. In the papadika, the difference of the barys to all the rest echoi lies on the ison and the cadences.

368. The ethos of the barys inclines towards tranquillity; especially when it makes use of the enharmonic scale, it preserves a serene and peaceful character, able to moderate the impetuosity of the third echos and to calm down the spirits. Therefore, it is not favourite among the young or the gentlefolks, but rather, among the old and simple people. Indeed, its ethos in the verses of the Octoechos is expressed as such.

Oh chant familiar to the low-rank soldiers
 You bend under your weight
 Simple echos, your surname to the barys,
 You love to reflect amidst the cries of hate.
 You are the chant of men, oh secondary third
 And your variety by all the simple is loved.

CHAPTER XIII

Concerning the plagal of the fourth echos

369. The psalmodists called plagal of the fourth the echos whose intonation formula is done with the neagie, which preserves majestic and serious pronunciation and indicates ascent and descent of either a major tone or of a major and a minor or a major, a minor and a minimum etc. Its basis or ison should be such that it will permit the free ascent of seven tones and the free descent of three tones. Moreover, four tones higher it should point at the agia and three tones lower at the neagie. Such a note is the ne. When, however, it has as ison the note ga, its ison is in reality three tones higher, but the chant proceeds from the ga as if from the ne, which means that two tones higher it indicates the sound of the bou instead of the ke, as is exemplified in the "ὁ βοῦς ὁ βοῦς ἐρχεται" and others (308).

370. The scale of the fourth plagal is the diatonic of the diapason system, but quite often the zo becomes a diesis, in which case the ϳ is put on the ne for lucidity's sake. The sign of the phthora of the fourth plagal is the Ϭ put on the note ne. On its higher octave is put the ϭ. When, however, this echos has the ga as ison, then the Ϭ is put on the ga and this note then abandons the sound of the ga and instead, the ne is pronounced. Therefore, as the intervals are altered, the parallage of the remaining chant is realized as if from the ne.

371. Dominant notes in the stichera and heirmologika are the ne, the bou and the di, because right from its

beginning, this echos points at a melody that belongs to the bou and it sometimes returns to the ison, sometimes--when directed towards high pitch--it points at the di and ascends up to its octave to make the cadence either on the di--when it is imperfect--or on its ison --when it is perfect.

372. The imperfect cadences occur on the di, the bou and the ne, the perfect on the ne and seldom on the di and the final on the ne. The signs of martyriæ in the fourth plagal are no others, but the ones determined for the first echos on the diapason system.^a

373. The intonation formula of the plagal fourth starts on the ne and ends on the ne. When though, the chant starts with a two-tone interval, the preluding verse ends on the bou. When the chant starts with a three-tone interval, the verse ends on the ga, as said (308). The fourth plagal itself starts on the ne and the preluding verse, starting with the di and descending diatonically, ends on the ne. When this echos is transferred from the first echos and its plagal or from the second plagal that have the pa as isa, it starts a tone lower. When it is transferred from the second or the fourth that have as isa the bou, it starts two tones lower. When it is transferred from the third or the barys that have the ga as isa, it starts three tones lower.







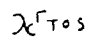







373. The difference of the plagal of the fourth to the chromatic and enharmonic echoi, lies on the scale. Its difference to the diatonic echoi lies on the ison, the dominant notes and the cadences.

375. The ethos of the fourth plagal preserves a character that leans towards charm and pleasure and that attracts passions. For this reason the comoi were mostly composed on this echos. It also leans towards modesty, to which contributes mostly the slow time-*agoge* and the transposition of the tone from the ne to the ga (363).

The verses in the Octoechos say the following about it:

You fourth among the plagals and seal of the echoi,
 You bring within you every beautiful chant
 And broaden the sounds of singing.
 The crown of the echoi you are,
 Being both their commander and end.
 Because you are the end of the notes
 And the stopping of sounds,
 At the top of my voice I call you twice;
 And this is the end.

376. When it is required to show the basis or ison of each of the mentioned echoi, the order they preserve from the high to the low pitch, the martyriai that indicate them and which are written before the chants and the martyriai of the notes of the melody written somewhere in the middle of the melody, it is possible to express all this the way they are represented in the plate below. As the notes of the diapason have seven notes and cannot procure with isa all the eight echoi, the pa becomes the ison of both the first plagal and the second plagal. It is observed that the plagals do not preserve the order of their authentic echoi and this is due to the fact that the eight echoi of psalmody were constructed upon the wheel and not upon the diapason.

Isa of the echoi	Martyriai of the echoi	Martyriai of the notes	Echoi
ke			first
di			second
ga			third
bou			fourth
pa			pl. first
ne			pl. fourth
zo			barys

CHAPTER XIV

Concerning the transpositions, i.e. the phthorae

377. The musicians realized after much observation that when they remain for long on one note or on the same echos, the ethos of the echos produces satiety when it becomes very familiar and the satiety is followed by annoyance. If before the production of satiety, they found out, they pass over to some other echos, a new ethos enters the minds of the auditors, it awakens them and makes them attentive. So, they learned to pass from note to note, from genus to genus and from echos to echos methodically, in order to avoid, through variety the disgust produced by the monomodal ethos of a melody.

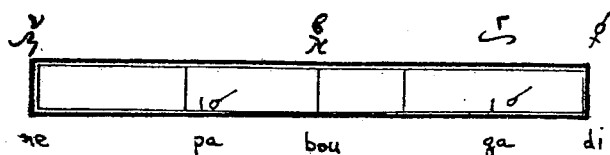
"Monody is to everybody irksome and produces satiety, but variety is pleasant."¹

378. Such a passing over is called phthora. When it is done from note to note as discussed (370), it is also called transposition, but when it is done in any other way, it is called phthora only. Transposition is to consider as ison some note other than the natural ison of the echos, obeying the proportions of the intervals of this note's scale instead of the natural note's scale. For example, the natural ison of the second echos is , as said, the di. When instead of the di, I take the ke and keep the proportions of the scale starting from the ke as if from the di, then I chant the second echos in transposition, considering the ke as di, the di as ga, the ga as bou etc. The same occurs also in (370).

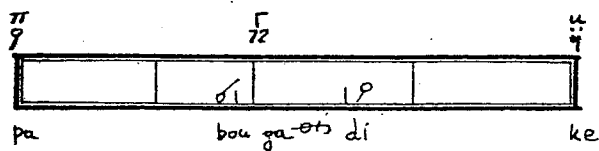
¹Plutarch Concerning the education of children.

379. Phthora is alteration that occurs in melody either by transposition or by the transfer from one genus to another, one echos to another or one scale to another. We use sixteen phthorae whose signs are hereby exposed. Eight of them are diatonic, the ♩ ♪ ♫ ♬ ♭ ♮ ♯ ♭ . Five are chromatic ♩ ♪ ♫ ♬ ♭ and three are enharmonic, the ♩ ♪ ♫ .

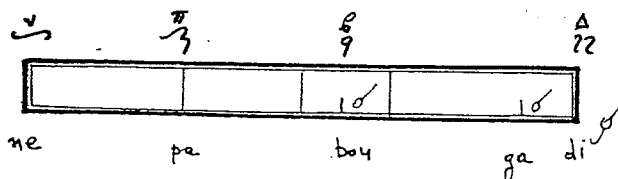
380. We have already talked about thirteen of them in passim, at the place that each has in the eight echoi. Here we speak about the remaining three. We start with the ♩ . This is put on the note di and asks for the ga and the pa to become dieseis, like di ♩ bou ♩ ne. Put anywhere else, it requires the same ascending intervals. Here is its scale.





381. Wherever the sign of this phthora ♩ is put, the note acquires the melody and the quality of the neanes and wants an hyphesis above it and a diesis below it, so that the first descending interval will become a quarter of the major tone.^a






382. This phthora ♩ is put on the di and the chant, proceeding towards low pitch, wants the first note to be a quarter of a major tone lower and the second to be a major tone lower. From there on it progresses towards high pitch and preserves the same intervals.



383. In brief, it should be known that every phthora has a tying and an untying. On the tying the sign of the phthora is put there where the alteration of the echos or anything else starts. The alteration does not occur before the sign, but after it. On the untying the sign of the first echos is put and the alteration occurs here too after the sign. For example, if one chants a chant of the first echos and wants to make a phthora to the second echos, the sign  is put on the ke, indicating thus that all the components of the first echos stop being and that those of the second echos come into existence. It is then assumed that the ke is a di, the di is a ga, the ga a bou etc.

When later it is required to make the untying, the  is put on the affected by the phthora di, that is on the note ke, and it is thus indicated that the echos of the chant returns back to where it came from. The untying might be done with any other sign of the diatonic phthorae required by the first note we come across.

384. At times a musician might tie after one phthora still another and then bring the untying. For example, if one chants in the fourth echos and comes across the  on the di, he knows that he should proceed on the scale of the second echos untill he sees the untying. If he then comes across the  on the same di, he does not make the untying, but instead, he has to proceed on the scale of the second plagal until he sees the untying. The untying of each phthora is done either with the  put on the di, or with any other of the diatonic phthorae.

385. Sometimes, a third phthora might occur and then, one, two or more untyings follow. All this is praiseworthy. What does not deserve praise, however, is when one ties a phthora in a chant and does not bring in the untying. The following is always obeyed, regardless

of where or how the phthorae are done:

- A' Instead of the note indicated by the phthora, the note on which the sign of the phthora is put is considered. The analogies of the tonal intervals are based on this note and the notes with which the parallage of the chant is done are said on this basis.
- B' Every phthora ought to be agreable. It is good, therefore, to do some kind of preparation and thus give the impression that the phthora is put where it belongs.
- C' The chant affected by a phthora can have imperfect and perfect cadences on the image of this phthora. Consequently, it takes the martyriae which are peculiar to this phthora.
- D' After the fragment of the chant the affected by the phthora, there ought to occur an equally prepared untying, so that it will sound agreable too.

386. One diesis or one hypthesis in a tetrachord do not constitute any system of phthora and consequently, no untying is required after them. When the diesis or the hypthesis last from the beginning to the end of a chant, while they are not included in the scale of the echos, then, next to the martyria of the echos is noted the note with the diesis or the hypthesis, like $\tilde{\eta}\chi\omicron\varsigma \sim$; $\delta \text{ ue } \rho$ or $\tilde{\eta}\chi\omicron\varsigma \frac{f}{\cdot}$, $\delta \text{ vn } \angle$.

387. Because of the phthorae, it happens that the voice of the chanter goes astray towards low or high pitch. The reason is that when the untying of the phthora occurs on a note which is below the natural, the voice goes towards low pitch and vice versa. For example, if I alter the ga into di with a phthora and next make the untying from the ga of the scale introduced by the phthora, the voice goes astray a semitone. If I make the untying on the pa or the di, the voice will not go astray because of the equality of the tones.

pa	bou	ga	di	ke
9	7	12	12	
12	9	7	12	
ne	pa	bou	ga	di

The scale as affected by
the phthora.

The natural scale.

This mishap was also observed by the ancient musicians, who when there was a fall of the voice one tone lower, they added one tone which they called power (dynamis). See in the Doxastikarion of Jacob the third of the question in the "αὐτὸν ἰκέρετε ."

388. It is necessary that there exists one common note, interval or scale for every alteration. The community is based on the similarity of the intervals. When in an alteration the two echoi have similar notes in common, the alteration is melodious, though when they have dissimilar notes, the alteration is not melodious. Melodious, for example, will be the alteration from the fourth echos to the second, as the intervals di, ga, bou are commonly similar in both the echoi. The alteration of the first plagal to the second plagal will also be melodious because the notes ne, pa and di, ke are similar in both echoi etc.

FIFTH BOOK

CHAPTER I

Concerning chant-making

389. Chant-making is a chant creating power.^a We create a chant not just by chanting different long known psalmodies, but also by inventing and writing our own new chants pleasing to the auditors (12). Chant-making, therefore, differs from chant-singing because the latter is the recitation of a chant, though chant-making is a creative state.^b Chant-making distinguishes three registers of the sound, the mesoeides, the netoeides and the hypatoeides. The mesoeides extends from z to z' in ascent, the netoeides from z' to z'' in ascent and the hypatoeides from z to z in descent (111).

390. In the old times chant-making was divided into three parts, the receipt (lepsis), the mixing (mixis) and the application (chresis). With the receipt the chant-maker was finding out in which register he should make the melody, i.e. whether to make it in the mesoeides, the netoeides or the hypatoeides. With the mixing he was adapting to each other the notes, the registers, the genera and the echoi. Application was the varied working-out of the chant.

391. The application had four parts, the direction (agoge), the web (plope), the draughts (petteia) and the stress (tone). The kinds of the direction were also three: straight, declining and peripheric. Straight is the direction which ascends with succeeding notes,

like

$\pi \overline{\text{pa}} \overline{\text{bou}} \overline{\text{ga}} \overline{\text{di}} \overline{\text{ke}} \overline{\text{zo}}$

Declining is the direction which descends with succeeding notes, like

$\pi' \overline{\text{zo}} \overline{\text{ke}} \overline{\text{di}} \overline{\text{ga}} \overline{\text{bou}} \overline{\text{pa}}$

Peripheric is the direction that ascends diatonically and descends chromatically, like

$\pi \overline{\text{pa}} \overline{\text{bou}} \overline{\text{ga}} \overline{\text{di}} \overline{\text{ke}} \overline{\text{zo}} \overline{\text{ne}} \overline{\text{pa}} \pi' \overline{\text{pa}} \overline{\text{ne}} \overline{\text{zo}} \overline{\text{ke}}$

$\overline{\text{di}} \overline{\text{ga}} \overline{\text{bou}} \overline{\text{pa}} \pi$ or vice versa

392. The web drops one note after the other at the distance of two or more discontinuous intervals, projecting among them the higher or lower ones. As an example of the web, look at the discontinuous parallage (46).^c

393. Draughts is the attack which occurs many times on one note, like

$\pi \overline{\text{ne}} \overline{\text{ga}} \overline{\text{ke}} \overline{\text{ga}} \overline{\text{zo}} \overline{\text{pa}} \overline{\text{ga}} \overline{\text{ga}} \overline{\text{ne}} \overline{\text{ga}} \pi$

394. Stress is the persistence on one pronunciation of sound, i.e. on the sound that lasts more than one chronos.^d The stress regardless of whether it occurs at the beginning of a melody, in the middle of it or towards its end, is notated with the pentaple when six chronoi are spent, with the tetraple when the chronoi are five etc. (119).

395. To these four kinds of the application we might add a fifth, the silence. Silence is when a chronos goes by between notes of a melody, without pronunciation either in order to complete the rhythm or the meter or for any other reason (119).

396. The ethe in chant-making were three, the diastaltic, the systaltic and the hesychastic. They were called ethe, because by them the state of the souls was

observed and corrected. Diastaltic ethos is the one by which majesty and virile disposition of the soul, heroic deeds and related passions are expressed. Tragedy uses this ethos most and among the others, the ones that preserve this character.

This ethos is peculiar to our first and third echoi.

397. Systaltic is the ethos by which the soul is driven to humility and cowardly disposition. This state of the soul fits to erotic passions, laments, compassions and the like. This ethos is peculiar to our second echos and all our plagals except the barys.

398. Hesyschastic is the one which is followed by serenity of the soul and a state of freedom and peacefulness. It suits to hymns, paeans, songs of praise, advices and the like. This ethos is peculiar to our echos barys and our first echos.^e

399. The alteration is also considered in chant-making. Alteration is the transposition of something similar to a dissimilar place.^f It is distinguished in four kinds; of the genus, of the echos, of the system and of chant-making. We make alteration of the genus when from the diatonic we go to the chromatic or the enharmonic and vice versa. We make an alteration of the echos when from one echos we go to another. We make alteration of the system when from the idapason we go to the pentachord or the tetrachord and vice versa. We make alteration of chant-making when from the diastaltic we go to the systaltic or the hesyschastic and vice versa.^g These are the most important conclusions about chant-making, drawn from the writings of the philosophers Aristoxenos, Eucleides and Aristides that have been preserved up to our days.

CHAPTER II

How the psalmodies were chanted

400. The ecclesiastical musicians wrote and chanted the different kinds of psalmody with rhythms, according to which they executed the cheironomia and invented chants that suited to their purposes. They also composed theseis of the musical neumes in order to write summarily the piece to be chanted and deliver their work to the students with good method. When their students made chants thereafter, they imitated the manner of their teachers.¹ This contributed very much to the preservation up to our days of the differences in the chants of the psalmody's species.

401. Species of psalmody are the following: anoixantaria, kekragaria, doxastika, stichera, dochai, troparia, apolytikia, kathismata, hypakoe, antiphona, polyeleoi, pasapnoaria, canons, odae, heirmoi, katabasiae, kontakia, oikoi, megalynaria, exaposteilaria, aenoi,

¹"The teachers prior to us were in agreement with each other and with themselves. . . . The gracefully-named maistor John Koukouzeles does not alter the stichera in his anagrammatisms, but follows them by step, although he was able too--indeed he was much abler--to make his own chants having nothing common with their prototype stichera. But, had he acted thus, he would neither act correctly nor would he think that he was acting as it befits to the science of music. Therefore, he follows the path of the old stichera precisely and alters them, if at all, obeying the rules of the science. Who comes after him, imitates in the katanyktika whom-ever was successful in this art before; and the same holds for the kratemata and the megalynaria." Manouel Chrysaphes.

prosomoia, idiomela, heothina, doxologies, asmatika, mathemata, typika, makarismoi, eisodika, trisagia, allelouaria, cheroubika, koinonika, kratemata, calophonic heirmoi etc.

402. These species of psalmody are reduced to four chant genera: the old sticherarikon, the new sticherarikon, the papadikon and the heirmologikon. The old sticheraric chant is the one found in the old anastasimatarion, in the old sticheraria and in the doxastikon of Jacob. On the sticherarikon, therefore, are realized doxastika, stichera, anastasima, aenoi, prosomoia, idiomela and heothina.






403. The new sticherarikon chant is the one preserved in the anastasimatarion of Peter Peloponnesian. On this chant are realized doxastika, stichera, anastasima, exaposteilaria, aenoi, prosomoia, idiomela, heothina, kathismata, antiphona and eisodika.



404. The papadikon chant is preserved in the koinonika and the cheroubika. On this chant are realized anoi-xantaria, kekragaria, dochae, polyeleoi, pasapnoaria, oikoi, megalynaria, asmatika, mathemata, eisodika, trisagia, allelouaria, cheroubika and kratemata.






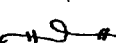




























The doxologies, the verses of the polyeleoi, the "Μακάριος ἄνθρωπος" and the like partake of the new sticherarikon and the papadikon chant.



405. The heirmologic chant is the one found in the heirmologion of Peter Byzantios. On this chant consequently, are realized troparia, apolytikia, anastasima, kathismata, hypakoe, antiphona, canons, odae, heirmoi, kontakia, megalynaria, exaposteilaria, aenoi, makarismoi, verses of the "Θεὸς ὡς ἐστίν" etc., doxologies, typika, eisodika and the katabasiae that are chanted slower. The calophonic heirmologion partakes of both the heirmologic and the papadic chant.

406. The chants mentioned were written with fifteen

neumes for the notes, because besides the ten neumes discussed in (27), the ecclesiastical musicians made use of five more neumes, three ascending: the oxeia , the pelaston , the kouphisma  and two descending: the syndesmos  and the kratemohyporrhoon .

407. They also used more hypostaseis than the ones we mentioned in (116) for the cheironomiae and for the enrichment of the chants. Here they are all named and notated: parakletike , stavros , epergema

, synagma , eso thematismos , exo thematismos , chorevma , ouranisma , seisma , thes kai apothesis , thema haploun , tromikon , ekstrepton , tromikon synagma , parakalesma , heteron , psephiston parakalesma , hemiphonon , hemiphthoron , enarxis , kratema , kylisma , antikenokylisma , lygisma , clasma , xeron clasma , argosyntheton , gorgosyntheton , piesma , bareia , diple , gorgon , argon , homalon , psephiston  and apodoma .

408. If one wishes to understand the chant written with the fifteen neumes mentioned and the hypostaseis enumerated, he can accomplish this with the parallelism. If, for example, he wants to learn what sound did the kratemohyporrhoon write, he has to take the koinonikon of Daniel in the   echos notated in the old and the new method and he will easily find out with parallelism. If he further wants to learn how was produced the sound of the ouranisma diatonically, he has to look at the "Τὴν παρὰ ὁρίων δόξαν" of Chrysaphos how the words πύλιν, οὐρανός, Θεοῦ are written by him and

how by us. If he wants to see how it was chromatically, he can look at the "Παρθέν ἡ οὐδ' " at the word ἑρπας. He could do the same for the psephiston parakalesma and all the rest, because the neumes and the hypostaseis we spoke about change their capacity when they change note, as for example, the parakalesma which wrote one sound on the note pa and another on the note bou etc.

CHAPTER III

The contemporary way of chanting

409. The ethos of the echos teaches the contemporaries to chant empirically, artistically or scientifically. The ones that chant empirically do not know the musical neumes or anything else among what is taught artistically or scientifically in music, but through much exercise and long practice of chanting, they obtain the facility and skill to chant troparia in any of the eight echoi suggested to them. A chanter chants empirically a troparion in the first echos, for example, and he is not in doubt that he is indeed chanting in the first echos nor does the audience think otherwise, even if it includes scientifically trained musicians. Nevertheless, they chant imperfectly because they do not write the chant with the musical neumes (6) and are unable to say it always in the same way, each time they wish to.

410. The ones that chant artistically know the musical neumes and keep in their imagination, as far as their sense can judge, what they have been orally taught. When their nature has an aptitude for music and if they do much exercise and training, they obtain the ability to write with the musical neumes whatever chant they hear or imagine and to chant it always in the same exactly way, because they do chant artistically (7).

411. The ones who chant scientifically know the musical neumes and keep in their imagination, as far as their intellect can judge, what they have been orally taught. They know the causes and reasons of the musical outcome. When their nature has an aptitude for music and they

insist in exercise and training, they obtain the ability to invent chants which have the power to move the soul of the auditor to whatever state they wish.¹ They make imposing melodies and use the neumes appropriately. Besides, as they are philosophers and men of the higher rank, they compose their own verses, choosing words that fit to their aims. Thus, with the three powerful means, the melody, the rhythm and the text, they accomplish every aim. Amphion inspires with his melody those that were building the walls of Thebes. Orpheus tames the wild beasts. Timotheos arms Alexander during a meal² etc.

412. To those chanting empirically we have nothing else to advise than to imitate as much as possible the ones that chant artistically or scientifically. If they wish any of their chants to be preserved, they could dictate it to some artistic musician to write it, if he considers it worthy.

413. To the artistically chanting we advise, if the chanted piece is a prosomoion, to use the chant identical, as preserved to us either through Peter or through some other teacher or, at least, we advise him that his own chant does not deviate from the melody and the rhythm with which the teachers before him rendered the original prosomoion.

414. If it is idiomelon, he should take care primarily with the echos' ethos and after writing its martyria, to start the melody with the dominant notes. Whenever he comes across a comma in the words of the text, he

¹Terpander united with his melody the Lacedaemonians who had been divided. Plut. Vol. II, p. 1146. Diodor. Vol. II. p. 639.

With his melody, Solon drove the Athenians to the island of Salamis etc. Plut. in Solon Vol. I

²Basil the Great in his advice to the young.

should make in his melody too the imperfect cadence of this echos. Whenever he comes across a semicolon, he should make the perfect cadence of the echos. Whenever he comes across a full-stop in the middle of the text, if it is at the end of a large period followed by another large period, he should make a perfect cadence; if it is the end of a short clause or of a regular clause followed by the same, he should make an imperfect cadence. A final cadence he should only make when the text finishes and there follows speech of the priest. As example, here is a text as composed by Peter:

The teacher of faith, and servant of speech,
Andrew, let us praise; because he fishes from
the sea's bottom the men and, holding in the
hands the cross as a pen and destroying the
power as an esparto, he drives back the souls
from the falacy of the enemy and brings to God
a well-accepted gift. Always faithful, let us
praise him and the group of the students to
Christ, to mediate so that He will be merciful
to us the Day of Judgement.

After the martyria of the echos, he starts the melody with the dominant notes di and ne and makes an imperfect cadence on the di on faith, then another imperfect on the bou on speech, then a perfect on praise and all the rest is obeyed as we have said.

415. The artist chant-maker can also make use in his chant of a phthora, depending on the meaning of the text, but he should do it rarely, imitating Peter the Peloponnesian, who was making many troparia without any phthora. Because frequent phthorae are evidence of a weakness of the chant-maker, as he is not able to find much material in one echos and finds refuge in many. When he is to make a tying and an untying of the phthora, he should look for what is pleasing the auditors' judgement and in agreement with the melodious alteration (388).. The same are also observed when one

is asked to compose any other species of psalmody that belong in the chant of the new sticherarion (403).

416. In brief, this is the way that the artistic musician should make chants of the new sticherarion. Now we ask, how should he make chants of the old sticherarion? In our days, chant-making on the old sticherarion is very seldom required, because there exist stichera, doxastika and the rest composed by ancient musicians and one can make use of the ready made. Nevertheless, in case one of the chant-makers wishes to make such a chant, we advise him to do much exercise and training and waste much labour with the old sticherarion and, drawing from it, adapt the old chants on the words of his text, as up to now foreign chants have not been introduced in the old sticherarion and he need not become the leader of such a counterfeit. When he borrows the chants and interprets them in our method, he should take them entire, not truncated, and observe with parallelism the way the mentioned neumes (22 and 407) and the hypostaseis (118, 126 and 407) were used in old times. If at the beginning we did not approve the ancient value of all the neumes and all the hypostaseis, it was because we wanted the elementary only, but the chant-maker who wishes to work with all of them, is advised to give them much attention and, with the parallelism, to penetrate deep into them and understand how they were used by our fathers. Then, after he discovers their interpretation, he should use them, depending on the requirements. Then he will be able to hope that he too is composing a melody from ecclesiastical theseis, delivered by our fathers.


417. Chant-making on the papadika is of great demand today and especially for the cheroubika and the koinonika. The chant-maker should know that after the martyria of the melody starts a rhythmless melody which appears like a prelude. In it the direction of the echos


is indicated both in ascent and descent. Next, a perfect cadence on the ison of the echos is done. This kind of melody is called parakletike, because the ancient chant-makers expressed such a melody with the parakletike, which was originally written $\text{>}\overline{\text{Z}}$.

418. The chant-maker draws most of the material from the melodies left by the old musicians on the same poems. He is greatly helped with this by the frequent reading and study of the old works which parallelism enables him to do. Because after obtaining the knowledge of the interpretation of many neumes and hypostaseis and the ability to adapt them on different notes, he can easily use them repeatedly without being accused that he is tautologous. Daniel used eleven times the kratemohyporrhoon in one koinonikon of the echos $\text{A}^{\flat}\text{G}^{\flat}$. Peter used six times the pelaston in the koinonikon "Σωμνησαν εἰργάσω" The new notated piece should be--or at least appear to be--an invention of the chant-maker, because it is not enough to draw chants from others and to use them beyond measure, but the chant-maker too should have some material invented recently either by him or by others in some other chants. He should, however, use this material in a different way, so that the new notated piece will be distinguished. And indeed, at times various new melodies and scales do appear. If he has nothing original to say, he should not attempt to make a new chant, but he should only use the ready-made.³

419. The chants are enriched with the restatement, the repetition, the literal imitation, the alteration and

¹"Like the musicians, who do not apply only what they are taught, but try to do more. And indeed, among the musicians, novelty and originality are flourishing." Xenophon Education of Cyrus, Book I. 50.

the restitution. Restatement is to make the ascent or the descent of a melody with the same thesis.⁴ Peter, for example, at the beginning of the koinonikon "Ἀνέβη ὁ θεός ἐν ἀλαλαγμοῖς" ascends from the ne to the di with restatement. In the "Ἐπεφάνη ἡ χάρις τοῦ θεοῦ" of the echos , on the Ἐπεφάνη he applies restatement twice and on the σωτήριος he uses the first restatement twice and the two following many times.


420. Repetition is to apply twice a thesis or a whole melodic period on the same notes, which is very usual in the old mathemata and kratemata. Repetition was also used by the protopsaltes John at the beginning of the kratema of the doxastikon of the polyeleos in the echos .

421. Litteral imitation is to realize with a high pitch melody the meanings that enclose some height--like heaven, mountain--with a low pitch melody those that mean something low--like earth, abyss, hell--with a joyful sound the meanings that enclose joy--like paradise, victory--and with morose sound the words that mean sadness--like death, condemnation etc.

422. Alteration is the transposition of something similar to a dissimilar place.^a There are four kinds of alteration: that of the genus, of the echos, of the system and of chant-making. Alteration of the genus is when we pass from the diatonic genus to the chromatic or the enharmonic and vice versa. Alteration of the echos is when we pass from one echos to another (415 and 377). Alteration of the system is when from the diapason we pass to the pentachord or the tetrachord and vice versa. Alteration of chant-making is when from the diastaltic ethos we pass to the systaltic

⁴By thesis is here meant the melody of one or two at the most meters or rhythms. Period is called the melody of many or at least two meters.

or the hesychastic and vice versa.

423. Restitution is to compose for all the endings of the text's periods one cadence whose melody extends up to two or three four-beat measures in the new sticherarion and up to several meters in the papadike, as in the "Τὰς ἐσπερινὰς ἡμῶν εὐχὰς", the ἄγιε υἱοῦ πατρὸς, the ἁγιοῦ πνεύματος and the ἐν κοίτῃ τῆς ἀνάστασις and in the cheroubikon of Peter the Peloponnesian who composed the εἰκονίζοντες, the προσάδοντες and the περίπλεον with the thesis 

424. Since in the text of the cheroubika and the koinonika there is no final or mid full-stop, but only commas, the perfect cadences occur at the commas, the imperfect at the ends of the words and the final at the end of the Alleluia. As an example, see the mentioned cheroubikon of Peter. When, however, the melismas of the cheroubika are very extended, it is permitted to have perfect cadences even where there is no comma. The same holds for the koinonikon when it has many words, like the "Whoever eats my flesh and drinks my blood dwells continually in me and I dwell in him, said the Lord." When, on the other hand, the koinonikon has three words, then in each occurs a perfect cadence. It should be known that the perfect and final cadences are done as determined for every echos, but the imperfect are done at the chant-maker's will.

425. Chant-making on the heirmologic chant is very seldōm demanded today, because most of the chants that would be composed on the heirmologic chant, are prosomoia, while the rest--the ones chanted in fast tempo (because the heirmologika might be with fast as well as slow tempo, though the sticherarika require slow tempo only)--were composed by the teachers Peter Peloponnesian and Peter Byzantios. If it is required to compose aenoi and kasperia on the heirmologic

chant, you observe what is said about the heirmologic chant in the instructions about each echos and thus compose. If, for example, you want to compose on the heirmologion the "Τὰς ἐσπερίνας ἡμῶν εὐχάς", since the difference of the heirmologic chant to the sticheraric lies, in the first echos, on the dominant notes, the cadences and the tempo, as made clear in (321), you should start with the pa, make the imperfect cadence on the di, the perfect on the pa and in the course of the entire melody, hang around the dominant notes pa and di. You have a good example of this in the heirmologic chant of Peter "Τὰς ἐσπερίνας ἡμῶν εὐχάς." At times, you could do an imperfect cadence on the ga, which preannounces a final or perfect cadence at the end of the troparion or the verse, as is obvious in the heirmologic doxology of Peter.

426. The calophonic heirmologion, standing at the highest rank of the vocal art, requires that the chant-maker is an expert with many chants and the entire calophonic heirmologion and that he is perfectly trained in psalmody. Peter Pereketes, who composed the most subh chants than any other before him, was the only successful with this kind of chant and no one before or after him had the success he had with it. Whoever, therefore, wants to compose a calophonic heirmos on his example, after becoming a chant-maker such as we described, he should observe the manner and the emphasis that only he (Pereketes) applied in his heirmoi and then he will be able to compose according to the taste of his century.

427. In this kind of chant it is usual to alter the tempo more frequently, to elect the materials as said (418), to enrich the chants as mentioned in (419), rarely to make use of a phthora and to accelerate the tempo of the melody from the high towards the low pitch and the reverse; also, to seek ethos that inclines

towards softness and joy and to make the novelty obvious, as peculiar to one heirmos and absent from the rest.

328. After the heirmos, follows a kratema whose melody has similarities with that of the heirmos and whose tempo becomes twice as fast. As the words of the kratema are meaningless, the melody should have the ability to inspire the auditor with the intended passion. After the kratema is the epiphonema, which is an heirmos that has a melody similar to the previous but more brief.

429. This is how the artist composes on the four genera of chant (402). When some empirical chanter sings a melody in order that an artist musician writes it down with musical neumes, the empirical chanter should repeat the same melody twice and three times and the artist should take care to find first the echos of the melody and second its tempo. The echos can be found with its four components (301), the tempo with these among the syllables of the chant that spend short chronoi, because it is easier to determine the long chronoi based on the short, than to determine the short based on the long.

430. The empirical repeats a fragment of the melody once and twice until the artist understands it, notates it and puts the martyria. Then, the empirical says another fragment of the melody and then some more of the remaining, until the artist writes the entire melody in sections. Next, the empirical sings the entire melody and the artist revises what is notated, and corrects the errors.

431. Finally, what has been notated is tested by the artist musician who sings its parallage, because if there is an error of one tone lower or higher, it is found with the parallage. A still better and more reliable testing is done with some instrument, because thus, one could even find an error of a semitone or a quartertone.

CHAPTER IV

Concerning the musical instruments

432. The way Daniel the prophet, although he was taught the wisdom of the Chaldeans, did not completely harm holy and sacred preaching, thus too, when the music-lover acquires the knowledge of some musical instrument and its application, if he wants to gather the useful only, like the bees and to avoid the sacrilegious use of the instrument, he does not harm sacred psalmody, but strengthens his musical knowledge, because the musicians might look with their own eyes on the instrument that which the voice makes in the larynx and the mouth invisibly. Furthermore, the errors that happen to escape the perception of the intellect when one composes with the voice only, are revealed on an instrument and can be corrected.

433. Among the musical instruments some are wind, some stringed and others percussive. Wind instruments are the aulos, hydraulos, plagiaulos, photinx, syrinx, salpinx, gayda etc. String instruments are the lyre, kithara, kinyra, spadix, pandouris, phorminx, piktis, sambyke, lekis, triangle, canonion, sandour, clavichord etc. Percussive are the tympan and the similar on which high and low pitch is not distinguished.¹

¹"Besides the wind and stringed instruments there are others that produce noise only like the crembala, which when touched with the fingers, give a shrill noise." Athen. Deipn.

These are called in the every-day language, or better said, in Turkish, davulia, kiosia, dumbelekia, tefia, dageredes etc.

434. The percussive are rhythmic instruments and please the sense of hearing with rhythm; the wind and string instruments are melodic and dispose the sense with melody. Among the melodic instruments some are played with single notes and some with many notes. With many notes are played the kinnyra, the canonion, the kithara, the gayda, the sandour, the clavichord;² with single

The instrument that is called in Turkish dumbelek is made of a hollow wood in the shape of a cone. It is covered with skin that is smooth and dry. No holes are made to it. It is played beaten with two small sticks. What is called in Turkish kiosi, differs from the dumbelek in size, as the kiosi is the larger of all the percussive instruments. It is said that there exists a kiosi inside of which are numerous small dumbelekia that resound with the sound of the kiosi. The kiosi is covered with thick skin smoothly scratched.

What is called in Turkish davul is an instrument made of hollow wood in the shape of a cylinder, covered on both ends with smooth, dry skins that have no holes. It is played by beating the right end with a thick wood specially shaped and the left end with a special thin stick. The one called tef, looks like a half davul and is an instrument made of hollow wood of cylindrical shape, covered on the one end only with dry and smooth skin that has no holes. When played, it is held with the left hand and beaten with the palm of the right hand and the fingers of both hands. It is very customary in the dances of beasts. The one called dageres is similar to the mentioned tef, except that this is covered with the bladder of the ox or similar thin skins. It has some little bronze wheels at the sides, which make a bell-noise when the dageres is beaten; it is used by the singers that the Ottomans call Hanentedes.

²The gayda that in our days is very much in use among the inhabitants of Turkish Europe, is an instrument made of a skin-bag, which is filled with air through a wooden pipe thrust in the neck of the bag. At the two behind legs of the bag are thrust two pipes, one of which has no holes and gives the pa, the other having seven holes above and one below, gives the ascent and descent of the melody with the fingers.

The canonion, the sandour and the clavichord have many strings and every string gives one pitch. It does not serve our purpose to speak about them.

notes are played all the rest.

435. Among the melodic instruments the pandouris is the easiest to teach with and on it the tones, semitones and, simply, every interval is learned more clearly. It is also called pandoura and phandouros and among us tamboura or tambour. It has two parts, the body and the neck, on which the tones and semitones are fretted as said (63 and 64). It has three strings, the first gives the Δ , the second the ga ?? and the third the pa ? . The frets of the tones being movable, can be done according to the music that prevails in every nation. The way we do the frets of the tones, the echoi of the diatonic and the enharmonic genera sound completely, but those of the chromatic genus do not. When, therefore, accuracy is demanded from the frets of the tones, there should be as many pandourides as there are genera and systems in music, that is six, and one should make the frets of each instrument according to them.

436. The aulos comes second in the instruction of music, because it represents the tones with the holes and it is not possible to remake or remove them according to our need or the needs of the music of foreign nationalities as it was said with the pandouris. The auloi are divided into straight and transverse, depending on the way they are used. The kinds in each division are many, but two are the most perfect and regular plagiauloi: the Arabic, called in Turkish *ney* and the European, called in French *flûte traversière*. The Arabic gives the *ne* and the European the *di*, so that the buzz of the Arabic plagiaulos is a fifth lower than that of the European. The notes emitted by the Arabic plagiaulos are on the wheel. They are the ?? , ? , ? , ?? , Δ which means that the same hole emits the *pa* and the *ke* with different blowings. The notes emitted by the European plagiaulos are on the diapason, they are the Δ , ? , ? , ? , ? , ? , ?? , Δ , ? , which means that

from the same hole with different blowings are emitted the ke and the Ke. The lower notes are emitted with weaker blowing and the higher with stronger.

437. The lyre sounds every genus and every system completely and perfectly, because the tones are not delimited and thus one is permitted to delimit and use them in every possible way he needs to. For this reason, however, it is not suitable for the instruction of music to beginners, as the musical intervals are undelimited and invisible on it like they are in our body machine. We distinguish three kinds of lyres: the three-stringed, very much enjoyed by the contemporary common Greeks, the four-stringed, most in use by the Europeans who call it with the French name violon and the seven-stringed whith which the contemporary noble Greeks and Ottomans exaggerate in sweetness and which in Turkish is called keman.

CHAPTER V

The dispositions of the auditors of music

438. To the one that chants artistically, we give that much advice, believing that it is enough to give him the elementary knowledge about chant-making. To the one that composes scientifically, since he aims to rise the soul of the auditors to some passion, we say that he should know beforehand how his auditors are disposed towards music. Because there are people who have a naturally bad constitution for music, who cannot distinguish a tone, a rhythm or a meter, to whom music, even the popular songs, sounds like a buzzing or a horn call. We imagine that to them music is an annoying noise, often a biting one, since they are unable to feel the slightest even enjoyment or other psychic passion. The musician, therefore, is more pleasing to them when he silences than when he chants, because their sense of hearing is tough. Nevertheless, there are some who have a naturally good constitution for music, who can distinguish tones, rhythms etc. The musician can find such auditors to be disposed in three different ways usually. The musician should give chants suitable and appropriate to each one of these dispositions in order to please, if possible, everybody, since this is the primary aim of a musician.

439. Of the first disposition are the people, who because of their nature or because of lack of exposure to knowledge and music, are not in the same state as the ones with tough hearing, but they get little moved with chants that are efficacious and have good rhythm.

They get pleasure in simple rhythms or in measures obviously divided, in well distinguished echoi and in one genus only, the diatonic. In this disposition are found common people and especially the sailors and craftsmen.

For them the chant-maker should not look for long rhythms and meters that encompass over fourteen chronoi or for chromatic and varied melodies, but he should use rhythms of few points, meters of two, three or four chronoi, vivid, enjoyable and animated echoi, able to move men who were not sufficiently refined by nature or knowledge through exposure. He should mostly use netoeideis rather than hypatoeideis notes, that is high rather than low. It is also good that the musician tells them before he chants, the rhythms and the echoi, as they will be easier felt when the auditors learn and get used to them beforehand. These people prefer the most noisy instruments to the fine-sounding ones and the high-pitched to the low-pitched.

440. Of the second disposition are some specialists and amateurs of music, who are no little startled with a usual chant, but who become extremely affected when they hear a new chant, one that they never heard before. Then, they become possessed by it like Ulysses when he was sailing in his boat among the Sirens. What happens to them when they hear chants that are well constructed, with rhythmical interest and inclination to joy! And what satisfaction do they get when such chants are chanted with brilliant, sharp voice, accompanied with a seven-stringed lyre, a three-stringed pandouris, a plagiaulos and a small tympan, that is a dumbelek!¹

¹It is not good for people with such a disposition to heighten their musical inclination and knowledge to the highest degree, because from passionate lovers of music, they end becoming undoubtedly unrestricted critics. They consider any chant, no matter how it is,

To such people the musicians should offer chants that are grave and long, using among the genera mostly the chromatic, but with alterations to the diatonic and the enharmonic. Among the tones he should mostly use the hypatoeideis rather than the netoeideis; as for the echoi, he should choose those that the text's meaning and the need demand. The rhythms should be extensive and composed of many points. The instruments applied should be those that emit the notes gently, freely and which strike the ear faintly.

441. Of the third disposition are some people who like one echos only and prefer it to all the others, who like one instrument only and wish to hear only that. This is the result of prejudice, of knowledge and custom.

Usually, however, they do not remain in such a disposition until the end, because age and the events of daily life are able to remove one disposition and to introduce some other. With regard to this, it is said that the two chromatic echoi suit to the young, the four diatonic to adults and the two enharmonic to the old.² Concerning such partial likings, the following is also said: Some echoi appear suitable to be heard in spring, others in summer, others in autumn and others in winter. It is still said that some echoi are agreeable in the day, some in the night, some in the morning, some at noon and others in the evening. To such people it is the duty of the musician to offer chants after he

excellent music and they also find deficient the notes of even the most correct and precise tones. They become unable thus to get even one tiny part of the enjoyment they would otherwise get from music, because the extreme sensitivity makes them at the very end unsensitive.

²"There are also some preferences of certain melodic species, depending to the sex and the age, as children want joy, women sadness and the older people want enthusiasm." Aristides Quint. Book II, 67.

has realized which are the ones that please them, because thus he will be able to use echoes, tones, rhythms and instruments that please them naturally. To conclude, it is their natural inclination that should instruct the chant-maker what he has to do.

442. It is not necessary that one is a music specialist in order to feel joy when hearing a pleasing chant. It only suffices that he has a good sense of hearing. The love, the desire or the knowledge that accompany music, might increase the pleasure, but they do not complete it, quite the opposite, they sometimes decrease it, because art harms nature. Music, in a way, is a chain of tones that are more or less apart from each other, depending on some rules that every human being with a good organism knows by birth, because the tones refer to the organisation of our bodily machine and depend either on the disposition and orderly movements of the ear's fibres or on the love we have by nature of some methodical order. For this reason there should exist some analogy between the ear, the tones and the rhythms, as in music there is at times an hypatoeides area whose tones are unable to please the ear and also a netoeides area that is impossible for the musician to apply without causing some annoying feeling.³ So, if the musician makes use of as much ascent and descent as the human voice can usually produce with little effort, he does not deviate from the analogy between

³The Ancient Greeks starting with the proslambanomenos, ascended up to the nete hyperbolaeon (221), where they stopped. They accepted no ascent above the diapason as Gerasenos Nicomachos reports: "They did not accept the human voice to go in descent below these chords to what they called horn-sounds, coughing, senseless and inarticulate sounds nor did they accept in ascent what they called crowings and sounds similar to the howlings of the wolfs, sounds that are unable to be composed, to fit anywhere or to produce consonance with others." Book II, 35.

the tones and the ear.

443. When the chant-maker combines the tones that are between these two disagreeable extremes, with each other, it is good that his combination is such that nearly every auditor will understand the relation of the tones to each other easily, as this is what leads to the liking of a melody, which liking is founded upon the facility of the ear to comprehend the melody.

444. The chant-maker should construct the rhythms and meters clearly, easily divisible and with orderly progress. Indeed, the only way that the human beings have to be in any way affected by music, is the comprehension of these mechanisms, as the body of the auditors, submitted to this mechanism, desires to conform with the body of the musician with movements of the legs, the hands or the head, movements that happen automatically, without attention or will, like if the members of the body are dragged by the force of music.

CHAPTER VI

The usage of music

445. Before the chant-maker starts the creation of a chant, there should preexist in his mind some aim, or else, he should conceive some new one, as "everything movable moves because of itself." The usage of music refers mostly to the following three: the praise, the human pleasure and the various needs of the illogical animals. The hymns give to the musician the aim to inspire to the utmost the souls of the auditors with veneration and love of God.¹ There are as many exam-

¹ "Having attributed the origins of music to God, as is our duty, we decided to chant to God with compunction in the sacred church; the invisible present to glorify. Because, as it is said, the siren-honey-flowing chants, the spiritual songs of the angelic and archangelic orders were handed over to the church complete. And like they did, with many different kinds, with fear and devoutness, appear before God, praising him unceasingly, one singing loud the "Ἅγιος ὁ Θεός, ἅγιος ἰσχυρός, ἅγιος ἄθράντος, ἐλέησον ἡμᾶς" the other the "Ἀλληλούια" another the "Ἄγιος, ἅγιος, ἅγιος ὑψίστος ζαβαώθ" some other the "Σέ ὑμνοῦμεν, σέ εὐλογοῦμεν etc" and another something else and, as is due praised the creator in many ways, in the same way we, that follow them and compete with them, should stand with fear and terror and great respect, signing together the holy songs in meaningful and meaningless words, because the church has been figuratively called heaven by the wise and God-taught teachers. Because the terere and the tototo and tititi and the nenannane etc, are made on the image of those angelic doxologies of meaningful and meaningless words. Because even the words that seem meaningless convey something and it is said: observe where you stand and what you sing. How are you going to defend yourself to the judge, oh man, being of liquid nature that dissolves at chance? The terere derives from the τέρει ποῦ, the tototo derives from τότε, τότε, the tititi derives from

ples of this aim as we enumerated in (401) and as many suggestions as our ignorance was able to provide us with.. Homer too, wishing to express the usage of music in hymnodising, says:

The Achaic youths all day long
Propitiated with songs
To the Gods, singing a beautiful paean.

446. In the usage of music as a human pleasure, two ideas are distinguished: the logic and the illogic. The logic refers to the passions of the soul (189 and 369) and the illogic affects the body. Music indeed, does affect the body too with alterations analogous to the reactions it causes on souless bodies.² So,

ti rivi. I found these written in some musical grammar, but they were taken from what Jphn Damascenos has said on this subject.

²The notes are transmitted to the ear through the air set into motion by the sound. Through the ear they are transmitted into the soul by which they are distinguished. So, since music acts through the air, I do not consider it needless to expose here the ideas of some philosophers, who wrote about the occurrences in the air caused by sound (278), because thus is understood how music acts upon the soulless bodies.

Sometimes the notes or, simply, the sounds thin out the air, as during great celebrations when crowds of people were invoking loudly, it happened that birds flying in the air were falling. So, the soldiers made use of this in order to catch pigeons sent by two cities whose transportation on earth was impeded because they were in the state of siege and wanted to inform each other of their situation. Still, it is observed everyday that the clouds dissolve from the sound of bells and the thundering of the canons. For the same reason cease the lightnings, or rather, they go away from churches and places where many people are shouting. You have to know that these results become disastrous to human beings especially when someone uses them before time, that is when the clouds are not still out of the sound's sphere, because sound moves the air and spreads it spherically.

For the same reason the air carries the attack of the notes to the surrounding bodies, even the ones that are far from the source of sound or from the chanter. You can indeed see in the churches and the theatres that

these ideas give to the chant-maker an aim which is either opposite to the prevailing passion or it augments it.

the flames of the candles, the smoke and the corpuscles elevated from the earth and seen in the straight lines of the sun's rays that enter from any small window, vibrate with the melody and the rhythm. Only, to this effect, the chanters should have their mouths close together.

The air is inhaled into the body, swallowed and, being absorbed, it enters into all our liquids. Then, it is collected as it is, with all its elements in the stomach, the intestines, the chest, especially between the ribs and the lungs, whence it is called enthoracic air. This inserted air being pressed to come into balance with the outer air--the one affected by the sound--makes the alterations in all the mentioned parts of the body and thus can affect it. And how greatly is the body affected by a liquid that is so close together with it and which is united so closely with its nature! If we will be excused for mixing suppositions together with facts, we think that the nervous liquid is of a similar nature to that of the air and, if it is so, then, no doubt, all these forces should affect the body greatly when it is endowed with sense instruments of great preciseness and especially, instruments that create this pleasing sensation which constitutes joy, the main result of music. It follows, therefore, that the body too is not little affected by music.

The air that vibrates because of the sounding of a string, puts into motion another string of the same note. Whence Aristides says (Book II, 107): "If we have two strings of the same note on one kithara and on one string adjust a small light reed and pluck the other, which is stretched apart, we will see the one with the reed very distinctly in motion."

Still, if in a room one has two lyres tuned in unison, not too much apart from each other, and plays with one, the other will sound the same sound. In the past century this was found by some Georgios, a Greek, blind by birth and an authority and very much experienced with Ottoman music. He made the seven-stringed lyre that we call violin and the Ottomans call keman. Before this Georgios, it was four-stringed. Below the strings played, he put seven more metallic strings, little apart from the others, so that the notes of the instrument sound sweeter because of the accompaniment.

Kircher says that he had in a room a multi-stringed instrument and heard one of the strings to sound very distinctly all the sounds of the bell of a neighbouring church. If one fills up with water or other liquids glasses that are similar and equally made and

The logic usage of music with opposite aim, creates sadness when merriment dominates; it augments the merriment with augmenting aim. Likewise, an opposite aim to sadness is enjoyment; to cowardness, strength; to lamentation, compassion; to love, common sense; to depression, encouragement; to exhaustion, comfort; to wildness, calm; to wrath, peacefulness.³ Which the aim is to augment passions, it is fully obvious.

placed close to each other, and rubbs the edge of one of them with the fingers, the water that is in this as well as in all the other glasses, will be agitated. It is also observed in this experiment that Kircher first tried, that the thinner the different liquids are, the more their agitation in the glasses, so that the spirit of the wine is agitated more than the wine and the water even less.

When we consider that the human body is composed of fibres more or less stretched and of liquids, of varied substance, we have conclusively to accept that music has the power to have the same results on the body's fibres with those that it had on the strings of neighbouring instruments. These results are:

All the fibres of the human body are set into motion.

The more stretched and thinner they are, the more do they vibrate.

The ones in unison with the sound, keep the motion for longer time.

Music has the same results on the liquids of the body as on the water in the glasses, which results are:

All the liquids contained in the body are set into motion.

Their agitation is proportional to the thinness of their particles.

The neuroid liquid, if such a liquid exists, is more affected than the lymphatic. If this is true, it is not necessary that the fibres are set into motion when a string or wind instrument is played.

³ Achilleus used music as a means to subdue the wrath he felt against Agamemnon (he was taught music by the very wise Cheiron). Homer says:

He was delighting his mind with a bright phorminx
Beautifully crafted with a silver cross-bar.

A plunder from the city of Eetion

Destroyed by him.

He cheered himself with this instrument

Singing the glorious deeds of men.

447. Opposite aim of the illogical usage is when the body is ill to look towards its health. The augmenting aim is to augment the illness.⁴ The very idea of music, to say it simply, augments the appetite,⁵ strengthens the blood circulation and makes the members of the body to resist in dancing,⁶ in marches, in efforts;⁷ it

⁴Mead reports the following extravagant result of music, to which he was himself the reliable eye-witness: "A musician had a dog who was extremely disgusted with one sound, hearing it with the utmost detest. Every time it sounded, the dog was distressed and was barking and groaning and showed great uneasiness and bad temper. The musician wanted to amuse himself and also to find out what would happen, so he started playing the said sound, repeating it frequently and spending a long time doing this. The dog like mad, shook many times and then, fell down with spasms and died.

⁵It is said that music affects the desires of healthy people greatly, sharpening them, in a way freeing them and motivating the auditors to behave insatiably and without restraint at the entertainments. Some generals say that the soldiers are spending more time and eat more greedily the same amount under the sounds of auloi. The Arabs were saying too that music fattens them. Even the ones ruling this place, eat under the sounds of musical instruments. Homer says: "The Gods had a banquet with a phorminx and a concubine."

⁶We see this happening daily. A person who does not love to dance even for one hour because of exaggerated laisiness that distinguishes him and who has neither good voice for music nor plays any instrument, when he is provoked by a melody of his taste, he can spend dancing a whole night without feeling any fatigue. This encouragement and strengthening and in addition the power of music to stop horrors, to calm down anger and also to prevent and become an obstacle to the desires following drunkenness, might have been the cause of the musicians signing during the fruit-eating after meal--part of the dinner--when people eat less and drink more and especially, when they drink different kinds of wine.

⁷Amphion made lighter the efforts of the builders during the construction of the walls of Thebes. Besides, the musical instruments lyres, auloi, trumpets, kitharæ, tympan, cymbals etc. have always been and are still used in military camps. It seems that music serves the soldiers not only to provide them with courage, daring

brings sleep, irritates wounds, heals epileptic diseases,⁸

and strength against the enemies, but also to prevent their distress and fear; still, in order that the soldier marches rhythmically, that he augments, slows or diminishes his speed and in order to conduct all the military movements that have various changes and to lighten the fatigue of a tiresome march.

⁸When one is singing or playing a musical instrument by water, there appears kind of wrinkling on the water's surface very distinctly. For this reason, it is said that deafness might occur from an unexpected big thunder as also spasms, mad fits and epileptic symptoms. In addition, wounds get irritated, because as the surgeons that are in military camps say, the wounds suffered in war deteriorate when the war goes on and the sick men hear the thundering of the canons.

That music heals also epileptic diseases is obvious from the fact that the periods of madness or melnacho-ly that Saul had, did not stop but with David's music. Chrysippe says that the aulos-playing is excellent treatment for the epilepsy and the sciatica.* Asclepiades thought that there is no better medicine for the madmen and, in general, for those suffering from any mental disease. This opinion has been verified with many experiments, some of which we hereby report.

Two madmen were completely healed with the music of many instrumental sounds for which they were asking with insistence. (Histoire de l'Ac. roy. des sciences ann. 1707, p.7). The interesting thing is that the symptoms of their illness soothed when the music went on and when it stopped, they started again to increase.

Bourdelot reports that a doctor healed the wife of a friend of his from madness, by bringing secretly musicians in her room and ordering them to play three times melodies suiting to her moods (Histoire de la Musique. Chap. 11j, p.48). In the same place he also reports about an instrumental musician who was saved from violent madness in a short time with vocal and instrumental music that friends performed in his house. The same writer tells also about some ruler who was freed from a horrible melancholy with music.

Wilhelm Albrecht says that in the same way, with music, he healed a person suffering from melancholia, who had tried before every possible treatment. He ordered that a little song is performed during one of the violent fits of the illness continuously. The ill man awoke up and was so amused by it, that he burst into laughter and thus the paroxysm left him (affectu Musique, 314). A pharmacist fired suddenly a gun close to the bed of a maiden who suffered from hysteria and had tried all treatments without result and this caused such

relieves the pains of sciatica,⁹ heals the bite of the poisonous spider.¹⁰ In relation to this Aristides too says (Book II, 64):

So, there is no human act done without music. Sacred hymns and praises are adorned with music; private celebrations and urban feasts are exulted. Wars and long marches are inspired and take place with music; sailing and rowing and the heaviest among labours becomes light, music being the relief of fatigue.

These plausible reports that introduce music into medicine were originated by Pythagoras, who first was inter-

a violent motion in her body that immediately the paroxysm dissappeared never to appear again.

⁹Theophrastos too, speaking about enthusiasm, tells us that music heals illnesses. He says that the playing on the aulos in the phrygian mode makes healthy those suffering from sciatica." Athen. Deipn.

Of what has been said in the first note of (138), it is not difficult to find the causes of the healment of sciatica, feet-pains, hysterias and other nervous illnesses as achieved by music: Music acts upon the fibres of the acoustical nerves and through the links and joints of these nerves, it acts on the entire bodily mechanism.

Theophrastos was using the phrygian mode to soothe the pains of sciatica. Bonnet says that he himself saw some one suffering from arthritis to recover completely with music. Desault believes that music is also beneficial for consumption. (Dissert. sur la Musique.)

¹⁰"In the days of Galien music was used against the bitings of vipers, scorpions and the spider of Pouile, at Galien's order. Desault, excellent doctor of hospitals, says that he used music beneficially for the bitings of rabid dogs. Finally, it has been shown that music heals the biting of poisonous spider. It heals by pushing the patient to dancing and when it does not produce this result it is not effective." Anth. Gazes Arch.

The inhabitants of America use music nearly for all the illnesses, in order to bring the courage and strength to the patient and dissolve this way the fear and sadness following it, because often these are more disastrous than the illness itself. Elizabeth, when she was dying, asked for musicians to come to her, as she wanted to move away the terrible thought of death by music.

ested in this, also by Theophrastos who used music for the healment of sciatica, by Hieron, Lord of Sicily, who recovered from an illness possessing great musicality,¹¹ also by Ptolemaeos the Second, who, getting accustomed to the music played at his side while he was ill, became most musical and, finally, by Homer who says: "With the incantation the blood became black."

Recently, many experiments have been done and many persons have written articles on this subject, among which one is Vaglivì, who published a special treatise.¹² 448. As the illogical beings are enchanted too by music, depending on the relation of their organisms to that of the human beings, some kinds of animals distinguish some of the sounds, some voices and some instruments and others distinguish others, as we clarify with the following. It is good for the musician to choose in

¹¹"It is said that Hieron the ruler of Sicily was originally a common-place person, the most unmusical of human beings and not much less rough than Gelon, his brother. When, however, he recovered from his illness, he became the most musical among human beings, because during the idleness imposed by the illness, he was exposed to music played by educated musicians." Aelian.

¹²Examining when was music introduced into medicine, we see that its introduction was very ancient, lost in those obscure and mythical times where history has not been able to enter. Music was part of the magical and astrological medicine, under the mysteries of which the old enchanter of the people hid the real effects of music, in order to deceive the crowds with greater security, giving a sacred and mysterious character to the natural events that occur because of common causes. So, the wise Boerhaave says with critical judgement, that all the extravagant myths about the healing of ill people should be attributed to music.

"When Clonias the Pythagorean happened to be in grievous disposition because of the disagreements in life and the mores, he used to take the lyre and play. To those who asked for the reason, he answered: 'I calm down.' " Athen. Deipnos.

this case too the useful and apply it suitably, because the horses and the deers are attracted by the syrinx and the aulos, the bustard is enchanted by rhythm, the crabs by the photinx and the herring comes on the surface with any melody or loud noise.

The deers and the horses listen to the syrinx and the aulos. The bustard is caught being enchanted and looks as if it dances with joy and struggles with the rhythm to keep its shoulders beautiful. The crabs are driven out of their holes and run at the sound of the photinx. It is also said that the herring comes up to the surface when there is singing or loud noise and then it gives up."¹³

The parrot and the canary as a result of their love for music, are taught even melodies. Let us observe with how much joy and attention the canary hears the melody of the serinette (a musical instrument by which such birds are taught various melodies). First it approaches the railing of the cage in which it is closed

¹³These are reported by Plutarch. Kircher tells about a small animal which sings in the night the seven notes of the diatonic scale ga di ke zo ne pa bou Ga. It takes two days for this animal to arrive at the top of a tree because of the singing and its slow feet. Linaeos calls it the slow-foot. It is also called ai, because it usually calls ai, ai. It is the only animal which has three toes. Georgios Bed. p.241

The story about the dolphin introduced by the musician Arion is, it is said, an allegory with which it was intended to show the love that the fish have for music and which was known in older times.

Some of the illogical animals are also attracted by music to dance with kind of rhythmical motions and jumps. The hedgehog when caught, rolls his skin into a mass and hides itself and thus we do not see anything else but its thorns. If one though strikes rhythmically on a metal or a tympan, it reveals itself and starts to jump with the rhythm. Aldrovandi certifies that he show a donkey dancing under instrumental sounds. Bourdelot reports the same about many mice that someone was showing to a crowd of people. They were dancing a complicated dance on a string. Eight of them were much more skilful than the others, dancing with perfect order.

and remains motionless and speechless until the end of the melody. Then, it shows its joy by plucking its wings and finally it tries to repeat with a strange voice the song being faithful to the lesson taught.¹⁴ So, the able hunter attracts the deer by singing or playing the aulos. The bear-breeder moderates the wildness of the bears with the syrinx.¹⁵ The elephant-breeder tames the elephants with the melody of human voices and the cattle-breeder induces the animals to drink more water by whistling to them a common melody. The camels, in order to carry heavier loads and to walk faster are entertained with musical instruments played near by or just by bells hanging from them.¹⁶ It is for some similar reason probably that started by the shepherds the common application of the aulos-playing.

In addition, this reasearch on illogical animals has informed us that some of them show the power of music with an extreme aversion and detest against certain sounds or even music in general. Vaglivì reports that he saw a dog always grieving, howling and bewailing when it heard the sound of a guitar or any musical instrument. But the strangest is the one stated

¹⁴Much has been said about the music of the birds and especially about that of the nightingales, the swallows, the swans, the Athenian cigala etc.

¹⁵There should be no objection that music acts upon the illogical animals in the following cases: Bears and apes trained in different kinds of dances, know to change the dance with the change of the melody and the rhythm; they dance under such a melody and rhythm one kind of dance and under another, some other kind.

¹⁶As the travellers in Asia testify, the camels carry effortless every heavy load and walk with such facility as if they were unloaded, when one plays musical instruments by them. When the playing stops, the strength of the camels diminishes; they walk slower and want to stop.

by Mead (447).

449. From these and similar observations--the knowledge of which is maybe not completely useless to the chant-maker--turning again to human reaction, we say that the Ancient Greeks considered music able to calm the tempers and refine the barbaric and wild by nature crowds. For this reason, they regarded music as a great treasure.

Great, oh happy ones and sure treasure is music to all who know it and are educated in it, because it forms the characters and calms down the anger and the controversies.¹⁷

This music that today has become so sensual and effeminating that looks as if it was created to enslave the hearts and drop eros into the souls, was so different in ancient times, that it affected in the opposite way, as music was used then as a protection against the arrows of eros and as a treatment for moderation.¹⁸ As,

¹⁷This was said by Athenaeos the Deipnosophist. Polybios attributes to the practice of music the existing difference in the characters of the two peoples of Arkadia, because the people that practiced music diligently was honoured and loved for its virtuous character and for the beneficial disposition and philanthropy that it showed towards the foreign guests and their veneration towards the Gods, though the other people that was thinking low of music, was not honoured and was hated because of its impiety and wildness.

¹⁸When the ancient men were to be for long away from their homes, they tied their spouses with strong belts that they themselves should untie at their return home. Because though, this appeared cruel to gentle men, when they were to travel, thought it worth while to leave by their spouses musicians in order that they play them sounds that have the power to moderate the hideous sensualities. So, they admit that Aegistos could not extinguish the hate that Clytaemnestra was feeling against him, until he killed the musician Demodocos, whom Agamemnon had left by his wife to teach her through music the moderation of passions. Phemios also, the brother of this musician, who was appointed to stay by Penelope, was saved with a happy and good end, gaining his salvation because of Penelope's lover who was ignorant.

therefore, music brought them virtue, they were educated in it and, being concerned with habits, heredity and appearance, they were accomplishing their aim.¹⁹ 450. The chant-maker should construct the melody, based on all this. He should offer to every soul a melody of the opposite or the similar aim (446) and, revealing the hidden ethos, make it better by persuasion.²⁰ If the ethos is unrefined and rough, the musician should bring it to the other extreme by moderation. If the ethos is gentle and soft, he should augment it with similarity up to the right proportion. If the ethos is obvious, he should make use of the appropriate echos and melody, but if it is hidden and difficult to recognize, he should bring a melody at chance and if joy is found in it, to continue, if it displeases and the character remains unshaken, he should change this melody into another, because a person who dislikes a melody will probably like its opposite.^b

451. When the cause of the dominating passion is known, the chant-maker may define, for the choice of rhythm, the ways of exercise following Plato's teaching. Per-

¹⁹"What then, is not gymnastics and music and all the lessons concerned with these?" Plato.

²⁰"The soul becomes the subject of examination of its duality, we mean its masculinity and femininity. . . . Because in men there exists some femininity and in women some masculinity. So, we judge that the ethos too is similar. Indeed, there are beardless men and hairy women and some men have languishing glances and some women look with fierce eyes. So, you have to seek after the ethos according with every kind." Arist.

"Music persuades very obviously, because it imitates such acts as the ones that happen really and in these acts the will comes first and speech follows after. When the act is completed, it imitates the intents of the soul, the ethe and the passions, it moulds speech with modes and sounds and the acts and movements of the body with rhythm. How then, we wonder that the Ancient Greeks were accomplishing that much improvement through music?"^a

sons that are spiritless and lazy, should be brought up with straight rhythms, melodies that move the soul violently and other similar techniques. The persons that are more aggressive and close to frenzy, should be brought up with the opposite. Pythagoras thus, having seen a young man becoming mad and getting ready to set fire to the house of his unfaithful lover, ordered a musician to change the meter of the verses and sing on the spondeios. Immediately, the stern of the music calmed down the distress of the abandoned lover.²¹ We have to avert the ill from thinking unceasingly at their state, by finding pleasant and merry rhythms and melodies for them, because thinking makes the nervous system accute and submits it to the realization of pains, suffering becomes more distressing and sadness more insuportable. So, the musician should take care to slighen and dissolve the pains of the ill and prevent the fatal symptoms, by introducing the hopes of salvation.

²¹This was found in scientific dictionaries..

CHAPTER VII

Concerning harmony

452. The so called study of harmony is, according to Aristoxenos, one of the ideas into which the science of melody is divided. Harmonics have an elementary power and for this reason the Ancient Greeks put it first in order in its relationship with the rest ideas.^a Harmonics is the practical and theoretical science of the nature of the hermosmenon. Eucleides calls hermosmenon what is composed of notes and intervals in some order.^b So, for us hermosmenon would be the pentachord, the tetrachord and the trichord. The octachord, which is composed of them would be harmony.

453. Harmony, therefore, as Eucleides says, is the organization of systems. It is called harmony because it was composed of two symphonies, the diatessaron and the diapente.

The very ancient Greeks called harmony the diapason, because it was the first symphony to be composed of symphonies. They called syllabe the diatessaron, because it was the first concept of symphonic notes. Dioxeia was called the diapente as it is continuation of the diatessaron towards high pitch and the diatessaron was the first to be created. The system composed of both the syllabe and the dioxeia is the diapason.¹

454. We showed in (57) that there are four symphonies, the diapason, the diapente, the diatessaron and the diatrion. The diapason is the most perfect of them and the most agreeable to the ear. For this reason the

¹Nicom. Geras. Pythagor.

diapason sytem is preffered and is the only one in use among the Europeans and the Ottomans, who tune their musical instruments on it only. The diapente symphony is less agreable, but dignified and majestic. For this reason, thewheel was considered more fitting to most of the psalmodies by the Fathers of our ecclesiastical music. The diatrion, on which the second echos is mostly realized is moderately agreable to us. The last rank in our preference holds the diatessaron.

455. The perfect chant (4) and the enharmonic genus (258) are also called harmony, as it becomes evident from Aristoxenos who says: "The people that lived before us wanted the harmonic only and they only dealed with harmony, while they had no idea whatsoever about the other genera."¹ They used the word harmony so broadly that it signified the melody, the mode and every hermosmenon,² even music itself. Whence the musicians were simply called harmonikoi.

456. The Greeks used the word harmony in the mentioned senses. The Europeans use the word in this sense: Harmony is a row of consonances succeeding each other that are pleasing to the sense of hearing.³ As melody is made of the webbing of notes, in the same way, harmony is accomplished with the webbing of consonances.

457. A consonance, according to them, is not composed of two notes only, like ga-ke, but also of three, like ga-ke-ne, four like ga-ke-ne-Ga and of five, like ga-ke-ne-bou-Ga.

²"Every hermosmenon composed of more than one tetrachord, is divided into conjunction and disjunction." Aristoxenos, Book III, 58.

³There are many other definitions of this sense of harmony, among which, the following: Harmony is the art of pleasing the sense of hearing with the mixing of many notes, heard simultaneously.

458. The most important parts of harmony are three, the hypatoeides, the mesoeides and the netoeides. Each of these is an entire melody with notes of different quantity either consonant or dissonant to each other. So, if harmony starts with the notes zo, di bou, the hypatoeides takes the note bou, the mesoeides the di and the netoeides the zo. Very often though, harmony includes more parts.

459. Harmony is sung by many because one person with one voice cannot sing all the parts of harmony. If, therefore, the consonances are organized in such a way that they succeed each other and that each singer sings with his own voice the notes that occur in one part or the harmony that happens to be his and progresses from one note of a consonance to a note of the next consonance and the voice uttered by the singers in this simultaneous way is pleasing the auditors, this is harmony. The singing together is called accompagne-ment.

460. Two methods of accompaniment are taught. One is the one done generally in vocal compositions of psalmody. The other is done with instruments. The first method, which was that of older times, requires that each note corresponds to the notes of the other parts. In harmony the syllables of the words might be said simultaneously or not. It is usual that the original melody is put in the tenore which is played with perfect consonances.

461. The melody composed is aiming at the satisfaction of the sense of hearing only and does not obey any rules or it obeys very few. What is pleasant by chance is accepted regardless of rules and what is not pleasing is, in the same way, disapproved. The harmony, however, is constructed and written on certain rules, without being completely tested with the ear. After being thus composed, it is played and it is often found plea-

sing to the sense of hearing. So, from the two kinds of music, one is created spontaneously and the other, harmony, artistically. A melody might be composed even by an entirely ignorant in music and still please more than *Thamyris*, but harmony is only done by those who have been taught the rules of music precisely.

462. The rules of such harmony are so numerous that can fill in an entire book. They also depend so much on the intervals of the Europeans' diatonic scale, that if it is asked that they are applied on our diatonic scale, we shall have to alter the intervals. This harmonic accompaniment requires, furthermore, auditors accustomed to feel joy from it. We do not receive the slightest joy from it and, therefore, any broader discussion on this harmonic accompaniment is useless because we cannot please the auditors. If one wants to study it minutely out of curiosity, he can find one of the books which treat the subject extensively and satisfy his curiosity. Nevertheless, in order just to show you how harmony is written, here is an example taken from the choral of *Alexander*, which has been transcribed by *Chrysanthos*:

FAUX-BOURDONS

The image shows a musical score for a piece titled "FAUX-BOURDONS". It consists of two staves. The top staff is a Western musical staff with a key signature of one flat (B-flat) and a common time signature (C). It contains a melody with various note values (half notes, quarter notes, eighth notes) and rests. Below the Western staff, the lyrics "Glo-ri-a pa-tri et fi-li-o et spi-ri-tu i san-cto" are written in Latin. The bottom staff is a Greek musical staff, which is a single line with a key signature of one flat and a common time signature. It contains a melody with various note values and rests. Below the Greek staff, the lyrics "Γλο-ρί-α πα-τρι-ε-τ-φί-λι-ο-ε-τ-σπ-ι-ρί-τ-ι-ι-σ-αν-κ-τ-ο" are written in Greek. The Greek staff is transcribed from a traditional Greek notation system.

PART TWO

DESCRIPTION OF THE ORIGINS AND DEVELOPMENT OF

MUSIC

I. Whoever has the desire and interest to find the real origins of music, which, it has been said, is contained in everything in the world,¹ has to go back to the origins of every nation's dialects. Because, since it appears that every language has a distinct prosody, it follows that every nation should also have distinct vocal music, which originally was nothing more than the outcome of Terpsichore. For this reason, many critical historians, examining the language and music of every nation, wonder which of the two came first into existence, speech or singing. It is said that there was a time when speech was singing and singing was speech for the

¹"In the old times it was said that everything contains music, because there is no being without symmetry and proportion and also because none of the creations, if it is beautiful, whether artificial, natural, perceptible by the senses or conceived by the intellect alone, is without symmetry and the appropriate proportions. And music is symmetry itself and entirely proportional because it is the harmony of the universe. It is not, therefore, unreasonable to call this divine thing the harmony of one's self with the universe; this thing where everything is put harmonically together and appears as such a perfect existence. Thus, music was deemed worthy to be called a miracle. Of this music which is considered to affect all this--to dominate everything, to adorn, to offer joy to the senses, harmony to nature and happiness to the intellect--we deal only as regards its affecting the senses and especially one of them, the hearing." Manouel Psellos.

Ancient Greeks. Such kind of interest, however, is limited to mythological conceptions and deals mostly with very gross lies, rather than tangible truths.

2. Whoever, on the other hand, is satisfied with clear foot-prints that lead to the origins of music and consults like a skilful hunter with precise thinking and philosophical research the historical documents that deal with the subject, looking for his purpose in this way only, to such a person this present book claims to be able to give a slight and faint idea, but so do also Plutarch, many other Greek and other nationalities' authors and especially the Holy Scriptures with which we start .

3. Before the Flood, we read in the Scriptures, Jubal invented the psaltery and the kithara.² After the Flood, in the days of Jacob, it seems that music was zealously and diligently performed, because when Jacob left secretly from Laban, the latter, complaining for such a flight, says: "Why did you make a secret of your flight, not giving me word of it, so that I might send you away with joy and music, tympan and kitharae?"³

4. Moses too was taught music besides his other education and he constructed musical instruments.

Moses found the way to make a bycane of silver. Here is how this instrument is: its length is little less than a cubit; it is a narrow pipe little broader than that of the aulos; it has an opening at the mouthpiece, just enough for the introduction of the wind and it ends in a bell, akin to that of the trumpet. In Hebrew it is called asotra.⁴

Deb'orah and Barak were taught music too.⁵

²Genes. chap. IV, 21

³Genes. chap. XXXI, 27

⁴Josepos chap. I, 1

⁵Theodoretos says: "David's healing with music was not natural but super-natural because David had received the grace of the Holy Spirit. It was this that acted through David and was calming the evil spirit. And the melody of the lyre was like an arrow sent against the daemons." Series of the Saint Fathers.

5. And David, it is certain, was one of the most able musicians, capable to harvest the ripe fruits of music, as with it he very often healed Saul from his periodic madness. "And an evil spirit was created within Saul, and David took the lyre with his hands and made music and animated Saul. And the good appeared into him and the evil spirit left him."⁶ When he was King, he formed a group of musicians that he appointed to sing playing instruments; and when he was taking to God the Sacred Ark, he listed himself among them. "And David and all Israel were making merry before God with all their might with song and lyres and harps and tambourines and cymbals and trumpets."⁷ David and others wrote verses which they set to music and chanted them in the Temple of God with various musical instruments for the glory of God, calling them sacrifice of praise and cry of joy, because as they considered music a most valuable and worthy thing, they sacrificed to God with it. Such verses were called psalms by them.

6. In those days Asaph, the son of Barachias, prospered too. He was a Levite and chanter in the House of God. And Asaph had his sons too to sing in the Temple of God. And all the psalms that are signed with the name of Asaph were composed by David and given to Asaph to sing them.

7. More chanters were the two Aiman, one of which was the son of Joel, the other, son of Mahol. This Aiman had fourteen sons who used to sing with him. They were Levites too and sung with cymbals, lyres and other musical instruments.⁸

⁶Judges, chap. IV

⁷Kings II, chap. VI, 5

⁸Among the chanters admired were those too, singing the miracles of God with lyres and harps and cymbals. Father of Mahol was Mari, who in the enumeration of the children of Levi was third in order. And Aiman was

8. And Solomon, according to the Scriptures, instructing Ethan the Ezrahite and Heman, Calcol and Darda, the sons of Mahol, sung three thousand paraboles, his odes being five thousand. Many other Hebrews composed music, but for brevity's sake, we are only dealing with the most important and will not mention others. So, this is what we have deduced from the Holy Scriptures as the most important on this subject.

9. The Ancient Greeks, having a strong inclination towards wisdom, did not want to classify the knowledge of music out of the sphere of common education. On the contrary, Pythagoras and Aristotle, in a few words, nearly everybody that was occupied with philosophy, venerated music and considered it as a gift of the Gods, as various historians inform us.⁹ As they were taught music and were teaching it too, they discovered

the son of Joel and grandson of the prophet Samuel, which means that he was related to Core. And the Cores were nephews of Moses the lawgiver. Therefore, the family of Aiman goes back to him." Photios.

⁹"Music is by general opinion a gift of the Gods." Plutarch from Plato's concerning superstition. Vol. VI, p. 638. See also Athenaeos, Book XIV, p. 624.

"It should not be misinterpreted that music was introduced to men for deceit and enchantment. Nor should it be believed that the Cretans and the Lacedaemonians introduced the aulos and rhythm in war-making instead of the trumpet. The first Arcades did not fail to offer music to all the citizens--who were, otherwise leading very strict lives--and to oblige them to be in the company of music not only as children but also when they become youths up to their thirty years. From infancy, the children of the Arcades are practicing, by law, to sing the hymns and the paeans that praise their heroes and Gods. After that, learning the nomoi of Timotheos and Philoxenos, they dance them every year under the sounds of Dionysiac auloi in the theatres, the children at the children's games, the youths at the men's games. And during their whole lives they sing in social gatherings, inspired one from the other rather than from the imported spectacles. If they ever refuse to learn any other lesson, they are not judged badly, but if they avoid singing, this is considered very bad." Athen. Deipnos.

many things about it, which they wrote

"Most of the Platonic and the best of the Peripatetic philosophers have eagerly pursued the writing on ancient music and its decline. Besides, those among the grammaticians and the musicians that received the topmost education, have very much dealt with this subject.¹⁰

10. According to the reminiscences of poets and philosophers, the word music derives from the Muse and the persons interested in the origins and the development of music are referred to the myths, or rather the allegories about the Muses. The Muses were said to be three at the beginning: Melete, Mnemosyne and Ode. With Melete is allegorized in ethics the thought required in work. With Mnemosyne is allegorized the memory which eternalizes the glorious deeds. With Ode is allegorized the melody that accompanies their narration. To the three Muses is attributed by the musicians the discovery of the three musical tones: the rough, the faint and the moderate; the low, the high and the equal; the dorian, the lydian and the phrygian; the major, the minimum and the minor. It is said that Pythagoras invented on the number of the three Muses the three parts of quantity in music: the hypatoeides, the netoeides and the mesoeides. The diatrion symphony should also be mentioned here. A more recent writer¹¹ says that Ptolemy invented the three musical neumes: the ison, the oligon and the apostrophos on the same number.

11. Some writers say that the Muses were four, others that they were five and others, seven. To the four Muses is attributed the invention of the diatessaron symphony, the tetrachord and the four monosyllable notes te, ta, tē, to. To the five Muses is attributed the invention of the diapente symphony and the pentachord

¹⁰Plutarch in the dialogue on music.

¹¹Manual of John Damascenos.

system. To the seven Muses is attributed the invention of the seven-stringed lyre, the diapason system and its seven intervals. Some elementary neumes of that number were also invented, by which, it is said, it is possible to write the quantity of melody with security. If the gorgon and the hagle are added to these neumes, the quality is also written.¹²

¹². Homer and Hesiod,¹³ therefore, say that the Muses were nine, the daughters of Zeus and Mnemosyne. They had no other care on Helicon,¹⁴ than to sing and dance with great gentleness and happiness and to praise the achievements of the Gods and of Zeus, their father. Singing music together, with their sweet voices, they danced around the altar of Zeus, having as their leader Apollo, who, standing in the middle, was plucking his lyre; for this reason he was called Musegetes.¹⁵ Besides their singing and dancing, each of them invented something of which she was the guardian.¹⁶ Cleio found

¹²Gabriel Hieromonachos.

¹³In the hymn to Apollo.

¹⁴In Theogony.

¹⁵The Muses reigned on Helicon, which is a mountain in Boetia. The early poets, wondering, it seems, at nature's beauty, felt at the end the need to appeal to the nymphs of the woods, the mountains, the fountains etc. Being incited to the pleasure of allegory, which was then generally prevailing, they distinguished the Muses with names related to the influence that they possibly had to the fruits of the spirit. These ideas, however, generated in a barbaric place--as such was Thrace--many products because, in spite of the peoples' ignorance, there appeared right from the beginning musical men like Orpheus, Linos and their students. So, the Muses were honoured there on the mountains of Pieria. Extending their domination from there, they were installed successively on the mountains of Pindos, Parnasos, Helicon and all remote places. They were called both Goddesses and Muses, as if they were both.

¹⁶Hesiod in Theogony and Pindar in I of the Pythians.

History and was supervising it; Thaleia found gardening, Euterpe the auloi, Melpomene singing, Terpsichore the choral dance, Erato the wedding and the pantomime dance, Polymnia agriculture, Ourania astrology and Kalliope poetry.¹⁷ As singing was the primal and principal occupation of the nine Muses, it has been called music.

13. Thus derived music its name. Who was now, its first inventor? Among the Gods, some want Apollo¹⁸ as the inventor, but some want Athena.¹⁹ Gerasenos Nicomachos says that Hermes invented the lyre and made it a seven-stringed instrument and taught it to Orpheus. And Orpheus taught Thamyris and Linos and Linos taught Hercules and Amphion.²⁰

14. As for men, the invention of Greek music is attributed to Amphion,²¹ as he first invented singing with the kithara and poetry accompanied with it. Amphion taught Thamyris and Linos and Linos taught Hercules whom he also brought up. Amphion was a Thebean and when the walls of Thebes were built, he was signing and ani-

¹⁷Hesiod ibid.

¹⁸Plutarch reports in the Dialogue on Music that Heracleides in the gathering for the discussion of music, says that Amphion, the son of Zeus and Antiope, conceived first the singing with the kithara and poetry accompanied with it and that he was taught it from his father. Others say that Apollo was the inventor of the benefits of music. Corinna says that Apollo was taught by Athena to play the aulos.

¹⁹ibid.

²⁰In relation to the above, see the work by Gerasenos Nicomachos the Pythagorean, which has also been printed.

²¹In relation to this, see Plutarch. The time when the walls of Thebes were built, which was the time that Amphion lived, is about 1540 B.C. according to the critical historians.

"Amphion received glory for his music, because he elaborated the mode of the Lydians, learned from them the mode of Tantalus and added three more strings to the existing four." Pausanias p. 720.

ated the builders.

15. Orpheus was a pupil of Amphion, but he was the father of poetry. He is commonly known as the creator of rhythms and music and was imitated by many; though, it seems, himself did not imitate anyone. When he was singing he was moving rocks and trees. He was taming the wild beasts and civilized men that appeared unmoved as they were savages.²²

16. Among Orpheus' students, Thamyris from Thrace set to music the war that the Titans fought against the Gods. He was surpassing far his contemporary men in handsome looks, in the beauty of his voice and in the singing with the kithara, so that he got the arrogance to argue about music with the Muses. Being defeated by them, he was deprived of his eyes, his kithara singing and his mind.²³ He was the son of Philammon and the nymph Arsia. Linos from Chalcis became the leader of lyric music, inventing the use of strings, instead of flax on the instrument. He was the first to bring the letters to the Greeks. He also taught Hercules and was buried in Thebes. He was honoured by the poets with lamentations for the openings of the offerings. The following epigram is to him:

Oh Linos, always honoured by the Gods, because the

²²"When Euridice the wife of Orpheus (who was practicing singing with the kithara and whose singing moved rocks and trees) died being stung by a snake, Orpheus descended to Hades wanting to bring her up again. He persuaded Pluto to send her back. Pluto promised but with the condition that Orpheus would not turn to look back while walking, before he reaches his home. But Orpheus disobeyed and turning back saw his woman and she returned down. Orpheus invented also the Dionysiac mysteries. He is buried near Pieria, been freed from the Maenads." Apollod. Concerning Thebes Book I

"Greece owes to Orpheus religion, music, pastorship and the other arts." Anthimos Gazes.

²³See Barinos at the word Thamyris.

immortals made you the first to sing human melody on the right foot. And the Muses lamented you, perfuming you while they were dancing and singing under the bright sunlight.

And Hesiod made the following verses for him:

Ourania gave birth to Linos,
The very beloved son,
Whom everybody laments in private or in common,
But especially all the mortals,
The singers and kithara players.
And they start and end
Talking about Linos only.²⁴

17. Hyagnis invented the aulos and the aulitic art which he taught to his son Marsyas.²⁵ He first taught Olympos, who brought in Greece the harmonic nomoi,²⁶ as before him the melodies of the Greeks were diatonic and cromatic only. It seems, therefore, that he enriched Greek music by introducing a genus that did not exist before and was ignored by his predecessors. He invented also the prosodic rhythms, on which the nomos of Ares is composed and the choreion which was very

²⁴See ibid. at the word Linos.

²⁵This is what Plutarch thinks. Apollodoros in I of the book on Gods, says that Marsyas was the son of Olympos. Apollo killed Marsyas by hanging him from a big pine-tree. Then he threw the corps to the river which thereafter was named Marsyas. Marsyas had found the auloi that Athena threw away because they deformed her appearance and he competed with Apollo. As it was agreed by them that the winner could dispose in any way he liked the defeated, when the judgement took place, Apollo took the kithara and played and then ordered Marsyas to do the same. He was, however, not as able and Apollo, being judged the best, destroyed him.

²⁶By harmonic nomoi is meant the enharmonic genus of music. Nomos ment the following to the musicians:
It is said that Apollo delivered to men the nomoi with his lyre. These men lived with these melodies and what was before beastly in them became civilized thanks to the sweetness of the rhythm. These nomoi were called kitharodic; from this meaning, by simplification, the musical modes on which we sing are also called nomoi.

often used in maternity songs. According to some, he invented also the bacchic rhythm.

18. Clonas was the first to compose the aulodic nomoi to the prosodes.²⁷ He also became poet of elegiac epics. Some, however, say that before Clonas, Troizenios had made the aulodic muse. The aulodic nomoi were: Apothetos, Elegos, Comarchios, Schoimion, Deios and Trimeles. Later the so called Polymnastia were found too, the name of which has possibly derived from Colophonios Polymnastos, to whom the invention of the lydian mode is also attributed.

19. The centaur Cheiron, who lived in Pelion, surpassed his fellow men in knowledge and justice. He taught Asclepios and Achilles.²⁸ As Pindar reports, Asclepios was using music in medicine as a help against some of the illnesses.

Guard against all melodies,
With gentle, healing songs you protect.

Achilles in order to console his sadness, soothed his anger against Agamemnon with music, as Homer rhapsodized:

He was delighting his mind with a bright phorminx
Beautifully crafted with a silver cross-bar.
A plunder from the city of Eetion
Destroyed by him.
He cheered himself with this instrument
Singing the glorious deeds of men.

20. At the same time a certain Demodocos from Corphu made a poem on the sack of Ilion and the wedding of Aphrodite with Hephaestos. This musician was appointed

²⁷"Like the kitharodic nomoi, the aulodic nomoi too are named from the instrument. Prosodic are called the songs sung at the offerings of the priest at the altar." Zenob. K. Pop, CXIX.

According to Soudas, the name refers to the poems sung by the lyre-players at feasts. Its spelling is indiscriminately with o or with ω.

²⁸See Barinos at the word Cheiron.

by Agamemnon to stay by the side of Clytaemnestra, in order to inspire her, through music, with self-control. Phemios, a man from Ithaka, made a poem on the voyage of those who came back from Troy with Agamemnon. He, said to be the brother of Demodocos, was appointed to stay by Penelope for the same reason.²⁹

21. Homer, the outstanding musician, rhapsodized his poems Iliad and Odyssey and hymns to the Gods. As he set to music all his poetry, many of the verses were without tail,³⁰ because he completed the lack of syllables with the melody.³¹ It is said by some persons that he was playing the lyre and singing verses as a beggar.³² He brought to the fore his student Arctinos, who invented the iambs.³³

22. Archilochos invented the rhythm-making of the three-meter rhythms, the setting of the rhythms of this genus, their collection and, generally, the playing of all this. To him first were attributed the epodes, the four-meter rhythms, the procratic, the prosodiac and the augmentation of the first. Some attribute to him the

²⁹These two musicians flourished during the Trojan war, that is in the year 1200 B.C.

³⁰"It is said that the defects of the heroic meter are six, three of excess: prokephalon, prokoilon and dolichoouron; and three of loss: akephalon, laglaron and meiouron." Zenobios K. Pop. chap. III, par. 49.

³¹The skilful musician is able to put in melodies of equal length more or less syllables than required, without producing discontent to the sensitivity.

³²"It is said that Homer was at first a beggar because of his poverty and indigence." Dion. Chrys. speech XI.

³³"He was the son of Teleo of Nauteo from Miletos and a student of Homer. According to Souidas, he flourished around the 9th Olympiad, but according to Eusebius, around the 30th Olympiad. What they both say, therefore, is doubtful." Zenob. K. Pop, Concerning the Iamb, p. 21.

the elegeion also. He showed too that some among the iambic could be spoken while played and some could be sung. Being a good poet, an athlet and a chant-maker, he prided himself with the following, as Athenaeos reports.

I am the servant of a warlike King
and an expert with the beloved gift of the Muses.

23. Alcman and Hipponax were the discoverers, the former of erotic songs, Hipponax of parody.³⁵ Alcman was Laconian, from Messoa. Crates though, reports that he was a Lydian from Sardeis.³⁶ Hipponax was an Ephesian, the son of Pytheo and Protis. He settled in Clazomenae, being chased out by the tyrans Athenagoras and Komas.

24. Lyric poets were Stesichoros, Alcaeos, Asclepiades and Ibykos. Stesichoros was called thus because he set dances; before he was called Tesias. He wrote

³⁴The iambic verses which are spoken while played are pronounced with the poetic rhythm, though the ones sung are uttered with the musical rhythm.

Archilochos was the son of Telesikles from the island of Paros. He flourished around the 29th Olympiad, 660 years B.C. He made a satyric poem by which Lycambes and his three daughters were so forcefully schocked (because Lycambes had promised to give him his daughter as a wife but lied) that they died because of it, hanging themselves as they were not able to support the shame. Apollo molified his murderer Kalondas, saying: "The servant of the Muses you killed and cleaned the temple." See also Anthinos Gazes, p.132.

³⁵Alcman flourished 610 years B.C.; according to Anthemos Gazes, he flourished in the year 670, in the 27th Olympiad. He was from Messoa, which is some place in Sparta or somewhere in Laconia. Hipponax flourished around the 40th Olympiad, 540 years B.C. according to Plinius. See Anth. and Zenob.

What parody and epode is, is explained by Zenobios Pop. XCV.

³⁶Alcman was an excellent creator of songs, according to Plutarch and he wrote six books of songs.

poems on the dorian dialect in sixteen books. His home-town was Himera, a city of Sicily. Having lived eighty-five years, he died in Catane.³⁷ It is said that he became blind after writing a blame to Helen, but that later, when he sung a recantation, he saw again. The beginning of the recantation is as follows:

This was not a true text; you neither advanced in the well-rowed ships or reached the citadel of Troy.

Alcaeos made use of the Alcaic meter in his verses. He wrote odes and was Lesbian from Mitylene.³⁸ Asclepiades made mostly use of the Asclepiadic meter. Its inventor, however, was, it seems, not Asclepiades, since Alcaeos and Sappho made use of it before him.³⁹ Ibykos invented the sambyke and wrote in the doric dialect seven books. He became very amorous with boys and was murdered by criminals.⁴⁰ He then took revenge

³⁷Stesichoros, one of the lyric poets, is considered by some the son of Hesiod. He was born in Himera of Sicily during the 37th Olympiad and flourished during the 50th Olympiad, 580 years B.C. He was the utmost enemy of the tyrant of Phalaris and died in Catane during the 56th Olympiad.

Alcaeos flourished with great fame during the 44th Olympiad. He persecuted the tyrants more with his odes than with his sword and became the best and the leader of the people persecuted by them. At the end he was caught by his enemy Pittakos, one of the seven wise-men, who being a brave man, did not use his power against him.

³⁸In relation to this, see Zenobios K. Pop, p.365.

³⁹See ibid. p.370

⁴⁰Ibykos, the son of Phytios, being murdered by some people and having no other eye witnesses but some cranes he saw passing by, said: "Revenge oh cranes my murder." The city wanted to find the murderers but could not. During a performance at the theatre where the citizens were attending, the cranes flied and looked at the murderers, laughed and said: "Here they are the murderers of Ibykos." Someone seating nearby heard them and reported to the authorities. The murderers being thereafter arrested, admitted the murder and were

through the cranes. He was Regine in origin.

25. During this period lived three very famous lyric poetesses, Sappho, Erinna and Damophile. Because of her great musical talent, Sappho was also called the tenth Muse. She invented the plectrum and the mixolydian mode. She composed hymns, nine books of lyric songs, elegies, epigrams (some of which are preserved in the Anthology of Epigrams), monodies and iambs. Her mother was Cleis and her town Mitylene.⁴¹ Sappho surpassed Erinnan in the odes, but Erinna surpassed Sappho in the hexametric verses, which can be compared, it is said, to those of Homer. Damophile's name is said to be taken from the love to the city evident in her songs; she had some other name before.

26. A distinguished lyric poet was Terpander the Arnaean or Lesbian, a descendant of Hesiod, or, according to some, of Homer. He made the lyre seven-stringed and was the first to write lyric nomoi, though there are some that want Philammon to be the first.⁴² He called his nomoi Boetic, Aeolic, trochaic and sharp, kepion and Terpandric. Adapting melodies of those rhythms

trialed. Ibykos flourished during the years of Croesus, in the 54th Olympiad. Some fragments of his poems are found in the work of Athenaeos.

⁴¹The distinguished poetess Sappho was born in Mitylene at the 36th or 37th Olympiad, 600 years B.C. Here father was called Skandronymos and her mother Cleis. Between the ages of 25 and 30 she left for Sicily because of love. Arriving at Leucas, she jumped--as it was usual among the desperate lovers--from the high cape into the sea and was drowned.

Erinna was from Lesbos, it is said, and flourished at the days of Sappho, but died nineteen years old

⁴²See Soudas at this word. Terpander flourished during the 40th Olympiad. Athenaeos says that it becomes obvious that Terpander was older than Anacreon. Terpander wins everybody at the Carneia; he wins both the metric and the prosal winners of the Carneia.

on the verses of Homer and his own, he was chanting them in the games. He won four consecutive times at the Pythia.⁴³ He rivaled the poetry of Homer and the chants of Orpheus. He also made kitharodic tetraodiae and proemia in verse and similar nomoi. To him is attributed the nete of the doric mode and the mixolydian mode entire, as well as the mode of upright melody of the upright accessible trochaeos. Pindar says, moreover, that Terpander was the inventor of the scholia chants too.⁴⁴ With him the state of music in Sparta reached its best and so he says:

Loving no more the songs of fine meals,
Let us chant new hymns
With the seven-stringed phorminx.

27. An excellent chant-maker was Anacreon from Teo, acity of Ionia. He, whom some considered a wise man and true philosopher, wrote odes and hymns.⁴⁵ Simonides from the city Ioulis of the island Kea, another excellent chant-maker was, according to ancient testimonies, the strongest in inspiring music and received the prize even at the age of eighty. It is said that he invented also the double letters, that is the Ω , Ξ , and Ψ .⁴⁶ Another excellent chant-maker was Hip-

⁴³Pythia is a place and a Greek celebration and festival. See Barinos.

⁴⁴Scholion chant is the one sung during drinking, whence it is called paroinion too. For a broader explanation, see Zenobios.

⁴⁵Anacreon flourished around the 62d Olympiad. He was born in the second year of the 55th Olympiad. His life lasted up to the 85th year of his age, when he was choked to death from a raising grape. He lived during a long time at Samos under the tyrant Polycrates who honoured him greatly. Later, after a charge entrusted on him by the general of cavalry, he went to Athens in a ship with fifty oars.

⁴⁶He has written in doric dialect elegies on the reigns of Kambyzes and Darius, on the sea-fight of Xerxes and the sea-fight at Artemision and a song on the

podikes from Chalkis, who organized and founded the musical competitions.

28. Pythagoras, believing that the essence of the universe is composed of music (Pausanias), went deep into the most philosophical research in music than any other before him. He divided the fifteen-chord into five tetrachords and added to those notes the proslambanomenos. He discovered the intervals of the tones and expressed their differences with numbers which are preserved today. These numbers and the modes that he used for the distinction of the intervals, the symphonous and diaphonous systems etc. are comprised in the present book, but are found more extensively in Nicomachos the Pythagorean, who received them from Philolaos, who had been a student of Pythagoras. The wife of Pythagoras Theano was in such a degree educated, that she did not only write books, but she also undertook the school of her husband after his death.⁴⁷

29. Thaletas from Gortynia, Xenodamos from Cythera

sea-fight of Salamis." Soudas.

Simonides was born during the 55th Olympiad and died during the 78th. Inventions worthy to be remembered are attributed to him.

⁴⁷The home-land of the distinguished philosopher Pythagoras was Samos. He was the son of Mnesarchos, a ring-carver. He was born between the 43d and 52d Olympiads and received his elementary education from Perekydes and Hermodamas. Leaving for Egypt, he went to their temples and sacred lands and was taught precisely the wisdom of the Egyptians. Moreover, he was taught astronomy, geometry and theology. Being captured by Kambyzes, he was brought to Babylon, where too he got as teachers the wise men of this place. When he returned to Samos, he started teaching. However, he was not successful and, wondering around the famous places and temples of Greece, left to end in Italy, where he organized a school in Croton and taught his own philosophical sect. He lived with his students like in a commune. His students received his sayings as oracles and they were saying: "He said so." According to some, he lived 99 years.

and Xenocritos from Locris were poets of Paeans.⁴⁸ Thaletas imitated the chants of Archilochos, but extended them to longer sizes. He added the Maron and Cretan rhythms in rhythm-making which were not used by either Archilochos or Terpander. Plutarch says that he remembers a song of Xenodamos which is obviously an hyporchema.⁴⁹ The Locrian Xenocritos made poems on heroic stories, which were called dithyramps.⁵⁰

30. Sakadas from Argos became a poet of chants and elegies that he set to music. He was also a good epic poet and won three times at the Pythia.⁵¹ Pythocritos from Sikyon, the distinguished aulos-player, was the only aulos-player to win the six following consecutive Pythiads. He also played the aulos six times in the pentathlon in the Olympiads. For this reason a post bearing the following inscription was built for him:

Monument to Pythocritos, the aulos-player
With the glorious victories.⁵²

31. Remarkable lyric poetesses were also Corinna, Telesilla and Praxilla. Corinna, being born in Thebes, was taught by a certain poetess Myrtis.⁵³ She won

⁴⁸The hymns to Apollo were mostly called paeans and sung for the release from misfortunes." Zenob.Pap.

⁴⁹Hyporchema is called the chant sung in dancing, as it becomes obvious with the following: "For this reason, since the beginning, it was the poets who created the public dances, using their formations for the sung parts only, and always respecting their gentleness and virility; whence such songs were called hyporchemata." Athen. See also Zenob.

⁵⁰The dithyramb is a chant sung to Dionysos and telling the story of his loathsome birth.

⁵¹Pausanias, Book VI, p.487.

⁵²ibid.

⁵³Myrtis was the mother or, at any case, the teacher of Pindar. A woman famous of her virtues and gifts and still more famous because Pindar and Corinna were among her students.

Pindar five times and got the prize. Telesilla was from a glorious family of Argos and her body was sick. When she asked the Gods for her health, it was said to her to serve the Muses. Therefore, believing at the oracles, she tried music and was delivered from her sufferings through harmony. She was admired both for her poetry and brave heart.⁵⁴ Praxilla wrote the dithyrambs reported by Hephaestos and scholia for which she was admired, as said by Athenaeos.⁵⁵ Among the ones reported by Gerald Lilius, however, none was preserved.⁵⁶

32. Lasos from Hermione introduced the dithyramb into the games and he also introduced the speech contests. Nevertheless, Herodote attributed to Arion from Methymna the poetry and the naming of the dithyramb when he said:

Arion from Methymna, having escaped on a dolphin to Taenaron. There was no kitharode at his days second to him and he was the first among men in dithyrambs. And we knew about all the poems he said, everything he spoke about or taught in Corinth.⁵⁷

Lasos' father was Charibinos and his home-town Achaia. By some he is included among the seven wise-men instead of Periander. He wrote a text concerning music which,

⁵⁴After Cleomenes, the King of Sparta, killed many people and was walking towards the city fiercer and brave, he faced the mature women defending their home-land from the enemy. Under Telesilla's leadership, they took the arms and, standing on the rampart, crowned the walls cyclically and astonished the enemies. So, they beat off Cleomenes, many of whose soldiers were killed. As for the other King, Damaratos, who entered and occupied the Pamphyliac, he was sent away. It is, therefore, obvious that she flourished around the 139th Olympiad.

⁵⁵Book XIV.

⁵⁶Anthol. 91 and Hephaestos 9. Praxilla was born in Sikyon and flourished during the 92d Olympiad.

⁵⁷Cleio.

though, is not preserved. He taught Pindar too, the most excellent among the young poets. By some, however, it is said that he was taught by Corinna, who said about him:

I blame the Ionian, the sweet-sounding Myrtis
for she was once the cause of the Pindaric dispute.
His father was Daiphantos and his mother Myrtis. Being both aulos-players, they taught this art to their son. He became so famous of his music that Alexander the son of Amyntas ranked him, later on, together with the other musicians that he respected.⁵⁸ Great emulation with Pindar had also Bacchylides from the city Ioulis of Kea (Tzia), a fellow-citizen and nephew of Simonides, who had been teacher of Pindar. Bacchylides was offered greater honour than Pindar from the king Hieron and for this reason Pindar casts all his arrows upon him, calling him a crow and himself an eagle. Bacchylides wrote erotic poems, prosodies, dithyrambs, hymns and many others.⁵⁹

33. Renowned tragic poets were Aeschylus, Sophocles and Eurypides. Aeschylus who had the brighter voice of all the tragic poets contrived the plan of the scene, established the number of the actors speaking to be two and invented many choral formations that he gave to the members of the chorus. He also invented the

⁵⁸Pindar was born in the first year of the 65th Olympiad. Thebes of Boetia is known as his home-land, but because of his great poetical spirit, he ejected the shame of his country. He was taught the lyre by Lasos from Hermione and poetry by Simonides. At the 40th year of his age Pindar was the most famous lyric poet and was honoured greatly. The Athenians erected a statue in his honour. The Lacedaemonians preserved Pindar's home, when Alexander demolished Thebes. His life reached its 94th year and he died gloriously.

⁵⁹Bacchylides flourished in the year 430 B.C.

dress, descent and dignified etc.⁶⁰ Because of all this, he was appropriately called the discoverer of tragedy.⁶¹ The wise Sophocles made scenography, innovated with the chorus and, abolishing the acting of the poet, invented the third actor. Pursuing sweetness in tragedies, he was the most popular.⁶² Eurypides, the on-stage philosopher, brought many and good additions

⁶⁰Tragedy was also adorned by Pratinas during whose life a theatre was erected. He was the son of Pyrrhonnios or Encomios and flourishing at the same time with Aeschylus, he was competing with him and with Choirillos. Aeschylus beautified tragedy after him so much, that he was called the Father of Tragedy. Ancient persons testify that he knew how to rouse particularly the passions of fear and compassion like no other else. He was the son of Euphorion, and was born in the 63d Olympiad. He fought no little in the battle against the barbarians. Defeated by Sophocles, he left for Sicily and went to the tyrant Hieron. He died in the 4th year of the 80th Olympiad. The following, among other epigrams, was dedicated to him: "This very tombstone says that here lies Aeschylus, the great man who came from faraway, from his familiar Attica to the bright Gelas of Sicily, crossing the sea. What is the malice of the citizens of Athens that envies virtue always?"

⁶¹"As regards quality, tragedy is divided into the myth, the ethos, the text, the intellect, the appearance and chant-making; whence every tragic poet is a cant-maker too." Zenob. Pop.

⁶²Sophocles was born in the 73d Olympiad and was named "bee" because of his sweetness. He wrote also elegies, paeans and a prosal text on the chorus at the time he was competing Thespis and Choirillos. He delivered 193 dramas and won 24 victories. He died six years after Eurypides.

Eurypides was the son of Mnesarchos and Cleito and was born in Salamis in the 1st year of the 74th Olympiad, 480 years B.C. He had heard Socrates the Athenian and Anaxagoras the Clazomenian. He wrote many tragedies, twenty of which have been preserved. He died when he went to Archelaos in Macedonia.

Socrates was born in 468 B.C. and died in 398 B.C. Plato was born in 427 B.C. and died in 346 B.C. Aristotle was born in 384 B.C. and died in 320 B.C.

on stage as he both applied very familiar concepts and attempted elevated ideas. The Athenians, therefore, seeing how these three poets made great achievements in such a short time, voted for the following:

The state will write and preserve the tragedies of the poets Aeschylus, Sophocles and Euripides and the secretary of the city will have the right to judge unfairly the actors when they cannot perform them.

The most outstanding philosopher musicians were Socrates, Plato and Aristotle.

Socrates studied by Connos, who taught him the kitharic ode. And Socrates did not regard it improper to be a student of Connos the musician; on the contrary, he was learning to play the kithara when he already was old.

Plato learned about music from Dracon the Athenian and Metellos from Acragas. Wishing to prove harmonically the soul's harmony with the four elements and the cause of the symphony between things of dissimilar constitution, he proved that there are two physical means in each interval related to the musical ratio.

Aristotle being taught by Plato, indicated how the young should make use of music. In the days of Socrates Damon the Athenian flourished too, a student of Agathocles and teacher of Pericles. He invented the inverted lydian.⁶³ Familiar to Plato was Archytas the mathematician too, who was given himself wholly in the Pythagorean philosophy and music. The most worth to mention of his inventions was a wooden pigeon which was so artfully constructed that it was able to fly by itself.⁶⁴
35. Dionysios from Thebes, Lambros, Lambrocles, Melanippides, who became chant-maker with them, Crexos,

⁶³ Damon flourished little before Socrates, as his student Pericles flourished at the same time with Socrates.

⁶⁴ Archytas was from Taras, his father being either Mnesagoras or Hestiaeos. He met Plato in the 96th Olympiad and flourished in the year 398 B.C.

Philoxenos⁶⁵ and many others observed the rules of the ones before them not wishing to innovate. Phrynis, Timotheos, Epigonios, Lysandros, Simmikos and Diodoros, having no love to the preexisting music, attempted to innovate and Phrynis united the hexameter with the lelymenon and made use of more than seven strings,⁶⁶ as the lyre was seven-stringed since the years of Terpander the Lesbian and Phrynis added the eighth and ninth strings and Timotheos added the tenth and eleventh, ancient music being thus led to softness. It is for this reason that the Lacedaemonians drove Timotheos out, when he went to Lacedaemon with an eleven-stringed kithara.⁶⁷

⁶⁵Dionysos from Thebes flourished in the year 450 B.C. Lambros from Erythraea, the teacher of Aristoxenos, was his contemporary. In 138 B.C. there was another, later Dionysios, who is called Dionysios Aelios, the atticist from Alicarnassos. Philoxenos was born in Kythera, in 367 B.C.

⁶⁶Proclos in Cod. of Photios, 259. Plutarch, moreover, reports the following: "An overseer cut out with an axe two of the nine strings of Phrynis the musician, saying: "Do not harm music." Apophthegm. Lac.

⁶⁷When he arrived in Lacedaemon with an eleven-stringed kithara, the Lacons expelled him, voting for the following: "Timotheos from Miletos arriving in our city and having dishonoured the old Muse by averting himself from the seven-stringed kithara and by playing and introducing polyphony, spoils the sense of hearing of the young and with the latest polychords of chant dresses up the Muse cheaply and with variety, instead of simply and orderly, composing chants with the chromatic diesis instead of the enharmonic, which would have brought the opposite results. When he was invited at the games of the Eleusinian Demeter, he sung for the prize an unbecoming arrangement of the fable and did not teach the sufferings of Themele correctly to the youths. It was therefore decided by the overseers to speak to the King about it and tell him to reproach Timotheos and oblige him to take off the excessive among the eleven strings and leave the seven only, in order that any one might see the gravity of the city and become cautious not to bring in Sparta the that lead towards luxury." This lies in Zenobios K. Pöp.

This lyric poet from Miletos was the son of Thersander, Neomysos or Philopolis. He wrote nineteen epic musical nomoi, thirty-six prooimia, an Artemis, eight arrangements, one encomion, the Perses or Nauplion, Phineis, Laertes, eighteen dithyrambs, hymns and some more. He did at the age of 97.⁶⁸ It seems that he achieved such facility with music that he was able through it to instill various passions in the souls of the auditors.

Basil the Great, therefore, says:

Timotheos excelled in music so much that he was able to arouse courage with serious and strict harmony, but also to relax and soften with loose harmony at his will. Thus, it is said that once he drove Alexander the Phrygian to fighting during a meal, but brought him back to his fellow-drinkers by loosening the harmony.⁶⁹

Epigonios invented a forty-stringed instrument and was the first to play without a plectrum. His origin was from Ambrakia, but he was honorary citizen of Sikyon. Simmikos invented an instrument of thirty-five strings, which was perfected by Diodoros who added new holes to it.

36. Among the ancient musicians listed here, some invented one thing and some another and there were more that made these inventions with them and still more who made other inventions about which we do not speak because of ignorance. It seems to me though that we have said enough about the origins and some developments of vocal, instrumental and rhythmic music. As, however, it is only possible through writing to recol-

⁶⁸ Timotheos flourished in the days of Alexander the Great.

⁶⁹ Also Dion. speech I concerning Kingdom and Plutarch (Concerning the fate of Alexander, p.507) "It is said that Antigenis had done the same, singing the Harmatios nomos. It is also said that the same happened to the Cardinal Hippolytos, who fought in Pannonia." Hieronymos Magios, Various Texts, Book IV, chap. XIII

lect about any art and science, it is not superfluous to deal with those whom we know to have written something concerning music.

37. First to write was Philolaos, second Lasos and third Dikaearchos, the writings all of whom are lost. About Lasos we spoke in (32). Philolaos was a student and successor of Pythagoras. Some fragments of his treatise on music were preserved by Nicomachos the Gerasenos, one of which is hereby disposed for the music-lovers.

Sizes of harmony are the syllaba and the dioxeia. The size of the dioxeia is one eighth larger than that of the syllaba, as the syllaba is from the hypate to the mese and the dioxeia from the mese to the nete and again, the syllaba from the nete to the trite and the dioxeia from the trite to the hypate; and the mean of the trite and the mese is one eighth, the syllaba is one third, the dioxeia is hemiolion and the diapason is double. Therefore, harmony consists of five eighths and two dieseis, the dioxeia of three eighths and one diesis and the syllaba of two eighths and one diesis.⁷⁰

Dikaearchos was Messenian, the son of Pheidias and teacher of Aristotle. He was a musician, an orator and a philosopher that Cicero named a very learned one.⁷¹

38. Aristoxenos is the most ancient writer on music whose work is preserved. He was the son of Mnesias, the bright musician from Taras of Sicily. After becoming a philosopher, he attempted music and became a student of his father, Lambros from Erythraea, then of Xenophilos the Pythagorean and finally of Aristotle. He wrote three books on music and 453 books on philosophy, history and every other branch of education.⁷²

⁷⁰See Nicomachos Gerasenos on music.

⁷¹The book of Dikaearchos the Messenian on musical contests (of which it is said that the annotator recalls 1190 verses) was rewritten by Fabricius. Hell. Books, Book III, chap. xi, pp. 267 and 295.

⁷²Aristoxenos flourished in the 111th Olympiad or, according to Anthemios Gazes, in the year 322 B.C.

39. Eucleides wrote an introduction in music, where he exposes the chords of the three genera, distinguishes six shades, throws light upon seven modes and exposes twenty theorems on the "section of the canon." This man is known for his elements of geometry.⁷³
40. A certain Nicomachos Gerasenos wrote on music and divided his treatise into two books. He was surnamed Pythagorean because he spoke following Pythagoras' ideas. He is called Gerasenos because of the city he was born, which was called Gerasa, as the old men among Alexander's fellow-soldiers inhabited this city when they were unable to fight. It lies close to Bostra and Arabia.⁷⁴
41. A certain Theon from Smyrna left us fragments about arithmetic and music, published by Ismael Woulliald.
42. Aristides Quintilianos wrote much more broadly and completely than the preceding authors and spoke about melody, rhythms and the results of music.
43. Claudius Ptolemaeos wrote in Greek the principles of harmony and expressed himself in a much more mathematical way. Ptolemaeos' harmonics are commentated by Porphyrios who left too a memorandum on music not to be despised.⁷⁵
44. Alypius exposes the signs which were used by the Greeks for the notes in fifteen tropoi in all three genera, that is in 45 cases. These musical signs were

⁷³According to Gazes again, Eucleides flourished 258 years B.C.

Eratosthenes, known as a grammarician, poet, philosopher and geometer and having flourished in the 126th Olympiad--194 or 196 B.C.--wrote on Pythagoras' "section of the canon."

⁷⁴Nicomachos flourished in the year 117 B.C. according to the same author. Theon and Aristides were his contemporaries.

⁷⁵Claudius Ptolemaeos flourished from 125 to 161 A.D. according to the same author. He lived seventy-eight years.

taken from the Greek alphabet.⁷⁶

45. A certain philosopher Gaudentius wrote an introduction in music where he speaks about the notes, the intervals and the modes. He also exposes the signs of the notes in four modes in the diatonic genus only.

46. Baccheios the Old wrote an introduction in musical art in the form of question-answer. He states ten rhythms. The following epigram about him has been found:

Baccheios the Old spoke about the tones, the modes, the chants and the symphonies of music. To him corresponds Dionysios. They show that the very great despot Constantin being a lover of wise technics and being called the inventor and teacher of all wise lessons, is not a stranger to music.

47. Three great historians wrote on music as well: Lucianos from Samousa, Plutarch from Cheroneia and Athenaeos. Athenaeos reports about some persons that were successful in music or have invented something related with it. Plutarch made two dialogues with the same purpose and Lucianos wrote a dance and an encomion of music.⁷⁷

48. In recent years two persons from Constantinople wrote about music too: Michael Psellos and Manouel Bryennyos. A volume on music is preserved by Psellos, where it appears that he did not do much besides summing up several terms, definitions and divisions of music. Bryennyos spoke very thoroughly about the quantity

⁷⁶Mark Meibom published a book containing the treatises, diagrams and signs together with translations and commentations in Latin of seven Greek musicians: Aristoxenos, Eucleides, Nicomachos, Alypius, Gaudentius, Baccheios and Aristides, creating thus a work worthy of much praise.

⁷⁷Plutarch was born about the year 50 A.D. and died in the year 135 A.D. Lucianos seems to have lived in the same period. According to Anthemios, he lived from 120 to 200 A.D. Athenaeos wrote after the 204 A.D.

in music according the Ancient Greeks and also about the echoi as conceived by the chant-makers in his time. It is, however, surprising that none of the two spoke about the rhythms, the cheironomia and the neumes, since Psellos wrote around the year 1105 and Bryennios around 1320, in which time, no doubt, the use of the neumes and the cheironomia (which lasted until after the Fall) was applied by many, because there do exist sticheria written six hundred years ago. Moreover, the Emperor Theophilos was composing stichera around the year 830, which he was giving to the chanters impelling them to chant and himself liked to do the cheironomia even in joyful celebrations.⁷⁸ In relation to this, the Emperor Constantin Porphyrogennetos reports often about the cheironomia. The chanters were chanting with the highly artistic cheironomia around the year 950 A.D. It follows, therefore, that the two authors mentioned, were uninitiated in the music of their time, or, at least, that what they have written on this subject has not been preserved.

49. This is how many persons we know to have written in Greek about Greek music. Among the Latins and the Europeans wrote, at the times of Theodorichus, Boethius, Cassiodorus, Martinianus and Augustine. More recently, wrote Zarlino, Salina, Naegeli, Vincent, Galilei, Doni, Kircher, Banchieri, Parschner, Parry, Perrault, Wallis, Descartes, Holder, Mangold, Malcolm, Burette, Rameau, D' Alembert, Rousseau and Choron. These and not a few more, wrote on music, stating also through guessing, what was said by the Ancient Greeks and notating the chants of the Greeks with the notes used in their times. However, what they write about the music that is in use among them today is true, as they say facts

⁷⁸See Kedrinos.

and not suppositions.

50. That much we have to say about Greek music before the Christian era. When our common mother, the Church of the Christians, was getting established and Christianity was spreading in various cities and becoming all the more perfect, it occurred to the Christians to glorify with music the splendours and wonders of God in the holy Church, as was the use among the Jews. And they sung in it the psalms of David, but composed also the "Σιγνώτω πᾶσα σὰρξ ἑροτεία", the cheroubikon, the Koinonikon, the "Ἅγιος, ἅγιος, κύριος Σαβαώθ", the "Σὲ ὑμνοῦμεν", the "Τὴν γὰρ σὴν μήτραν" and the rest chants of the divine and holy Service. Later, they used music at vespers, the midnight office and the matins. As in this period in which both John Damascenos (around 736 A.D.) and Cosmas who was brought up and educated with him⁷⁹ lived, a way to write the chants with cer-

⁷⁹The home-land of our father John Mansour from Damascus, one of the saints, was Damascus of Syria. His parents were very famous and glorious. His teacher was Cosmas, a learned clergyman from Italy. John with Cosmas the Melode were taught by him many branches of education and were perfectly initiated in music. John flourished around the year 728, at the time of Leo Isauros. Around 756 he departed this life to Lord. More recent authors place the method and neumes of ecclesiastical music back to the years of Ptolemaeos the Philanthropist, King of Egypt, that is 285 years before the year of Grace, as they said: "King Ptolemy, regarding the echoi confusing and disunited, ordered the wise men of the Hebrew to translate the Hebraic scripture into Greek and compose all the chants of the echoi; so, a so called Musical Book was made out of them. From it all arts of priesthood were learned. The book was set on fire with a lot more by the atheistic barbarians."

"Men, ignoring how they would be able to praise God without these books, went off the straight way towards the auloi and kitharai and, entering the churches with such God-loathing instruments, they chanted and then departed to the theatre and, to say it simply, to every impious and God-hating act. All the people being enchanted with these instruments were dragged by force to the Devil who oppressed them. Untill God, having mercy on his creation, erected in the church the

tain symbolic neumes wase invented, John from Damascus wrote with these the anastasima of the Octoechos and the kekragaria--which were interpreted by Peter the Lacedaemonian in the eight echoi--the melodies of one cheroubikon and one koinonikon, the "Νῦν αἱ δυνάμεις" and the "Προστασία τῶν Χριστιανῶν ἀγκυταίσχυντε" in the plagal of the second echos and the "Γεύσασθε" in the first echos. So, judging from the chants preserved written with the mentioned musical neumes, he is called the first teacher and the originator of our ecclesiastical music. When he made the Octoechos, he taught the later psalmodists not to exapnd the eight echoi and their melodies not to deviate from them.⁸⁰

We list here now in alphabetical order the names of all the teachers and inventors of psalmodies that time has marked out as teachers and composers of things worthy to be chanted in the holy Church, from that period up to our times.

A

51. Agathon, the brother of Xenos Coronos. The monk Athanasios. The monk of Athos Athanasios. Athanasios the patriarch of Constantinople, student of Balasios.

three illuminators of the Universe: the greatest saint among the saints, Cosmas the poet, his most bright and graceful student John Damascenos and, above all, the greatest lucifer and equal to the angels, John Chrysostomos. These men, acting under the God-inspired will, renovated and harmonized this art which they delivered minutely and artfully to men.

⁸⁰"Depuis que nous avons écrit ceci, nous avons encore trouvé, en feuilletant le même livre, au haut d'une page & dans la marge, cette date, ετος ωκε'. ce qui feroit an 805. Si c'étoit-la la date de ce livre, il remonteroit à peu-près au temps même de S. Jean Damascène, qui est l'inventeur de la musique Grecque moderne; & cela ajouteroit sans doute beaucoup au mérite de ce manuscrit."a pag. 786. de l'etat actuel de l'art Musical en Egypte par m. Villoteau.

Alypios. Ambelokepides. Ananeotes.⁸¹ Andrew, the holy shepherd of Crete. Andrew of Jerusalem. Andrew Sigeros. Andronikos. The holy monk Anthimos. The priest Antony, the great Oikonomos, who had been a student of Hieremias of Chalcedon. Argyros from Rhodes. The monk Arkadios. The holy monk Arsenios the Big. The holy monk Arsenios the Small.⁸²

B

52. The priest Balasios, student of Germanos of New Patrae.⁸³ The monk Bartholomaeos. The domestikos Benedictos. Blateros. Byzantios.

G

53. Gabriel, holy monk and philosopher.⁸⁴ Gabriel from the monastery of Xanthopouloi. Genadios from Anchialos. The monk Germanos. Germanos of New Patrae.⁸⁵ George Kontopetres. George Panaretou. George Sgouropoulou. George Plagiotou. George, protopsaltes of Ganos. George from Raedestos, protopsaltes of the Great Church. George the Cretan.⁸⁶ George Glykys. The holy monk

⁸¹Ananeotes was the first creator of oikoi; second was John Glykys who imitated Ananeotes; third was Ethikos and then Coucouzeles, says Manouel Chrysaphes.

⁸²He was the first to compose calophonic heirmoi and was active little before Chrysaphos and Balasios.

⁸³He composed an heirmologion of the katabasiae, abridged by Peter. He wrote chants of doxologies, calophonic heirmoi and many others. He was a contemporary of Chrysaphes the Young.

⁸⁴A manuscript manual on music of his, written while the cheironomia was still in use, and addressed to those who know about it, is preserved.

⁸⁵He was a contemporary of--or little younger than--Chrysaphos. He flourished around the year 1670. He composed a sticherarion and many others.

⁸⁶He was the pen of Jacob the protopsaltes, because Jacob, having had no training in writing, was chanting like if dictating and George was writing. He was tea-

Gregory. Bonnes the Aliote.⁸⁷ Gregory, the present lampadarios.⁸⁸

D

54. The monk David. Damianos Batopedinos. Daniel the Old. Daniel the Young. Daniel the Protopsaltes, student of Panagiotes Chalatzoglou.⁸⁹ Demetrios Dakianos, student of Coucouzeles. Demetrios from Rhaedestos. The monk Dionysios. The people's drafter Doucas. Doucas Siropoulos.

E, Z.

55. Eunouchos, protopsaltes of Philanthropion. Ephraem from Karia. Zacharias, protopsaltes of Kyzikos, nephew of John the Protopsaltes. Ethikos. Zacharias Chanendes.⁹⁰

aching music at the Phanari of Constantinople, in Chios and in Cydoniae of Ephessos, where he carried out our common duty in the year 1816. He attended lessons by Daniel the Protopsaltes, Peter the Peloponnesian, Peter Byzantios and Jacob the Protopsaltes. He was the teacher of George, the present lampadarios. The supervisors of our school were studying to bring this George in order that he becomes a member of the three men of the new method of music. Death though, forestalled and deprived music-lovers of the musical goods expected from him. He was a creator and teacher of psalmody, but not a chanter, as he had never chanted in the church.

⁸⁷He was the protopsaltes of the Great Church during the Fall of Constantinople.

⁸⁸He was a student of Jacob the Protopsaltes, Peter the Protopsaltes and George the Cretan. He is one of the three teachers of ecclesiastical music.

⁸⁹The origin of Daniel the Protopsaltes the melodic trumpet of our century, was from Tournabon near Larissa. The 23d of December of the year 1789, a Saturday at twelve o'clock, he carried out our common duty. Then, Jacob was elected protopsaltes and Peter Byzantios lampadarios.

⁹⁰Zacharias Chanendes was a contemporary of Daniel. Of his are preserved calophonic heirmoi. Great and praiseworthy fasls by him are also preserved by the chanendedes of today.

TH

56. The monk Theodoulos. Theodoros Stoudites. Theodoros Agalianos. Theodoros Thalassenos. Theodoros Kallikratias. Theodoros Klabas. Theophanes Karykes, patriarch of Constantinople. The Emperor Theophilos.⁹¹

J

57. Jacob Peloponnesian, protopsaltes of the Great Church.⁹² Jeremy of Chalcedon. Joacem Alapases of Byzie, a student of Balasios. John Damascenos, our holy father. John Glykys. The Maistor John Coucouzeles.⁹³ John Batatzes. John Sgouropoulos. John

⁹¹The Emperor Theophilos reigned around the year 830 A.D. Kedrinos says about him that he made it a point of honour to be a chant-maker too, that he made a few hymns, composed stichera and exhorted to singing. It is also said about him that being impelled by his love of chant, he did not abandon the cheironomia even during joyful feasts in the Great Church.

⁹²Jacob flourished around the year 1790 A.D. He composed a book of the entire Doxastikarion, eight doxologies, abridged the great kekragaria and the polyeleon of Daniel. Impelled by the patriarch Gregory, he corrected the errors that existed in the ecclesiastical books due to the carelessness of the typographers. He was a good grammarian and would have been an excellent chanter if he did not have bad rhythm, because as he ignored the rules of rhythemics and poetry, he did not keep the rhythm of the prosomoia in order, supposedly, to obey the meaning of the troparion, which greatly exasperated Peter Byzantios, who was at the time lampadarios.

⁹³The following is found about him in the book called The sinfuls' salvation: "There lived a fatherless young man in the regalopolis Dyrrhachion of the Justiniana Prima. His mother being pious and a lover of God, gave her child the sacred scriptures to learn. Everybody called the child angel-voiced, as he was very bright in mind and had an extremely beautiful voice. At that time, they were looking for persons who spoke and sung beautifully, as is always the use in Kingdoms. When he was found, he was put in a royal school to be educated in the musical art until he becomes perfect in it. After a short time, he surpassed everybody, being keen and prudent . . . "

John Phokas. John Ouraniotes. John Cladas.⁹⁴ John Coucoumas.⁹⁵ The priest John Plousiadenos.⁹⁶ John Protopsaltes, student of Panagiotes Chalatzoglou.⁹⁷ John, protopsaltes of Rhaedestos, nephew and student of Gerasimos of Heracleia, whose student was also the holy monk Joacem from Rhodes. Joasaph, the young Coucouzeles.

K,C.

58. Kallistos the Old.⁹⁸ Kallistos from Nicaea. Kambanes. Karbounaris. The nun Kassiane.⁹⁹ Klemes

⁹⁴Of his there exists a manuscript grammar of music, concerning the metrophonia. He lived after Coucouzeles.

⁹⁵There exists by him too a manuscript grammar of music concerning the metrophonia and the ehoi.

⁹⁶By him exists a Wheel at the beginning of the Papadike.

⁹⁷This John was from Trebezond. At first he was a goldsmith, then, studying under Panagiotes and being taught by him all the musical poems preserved up to then and as he was rather efficient with music, he was elected lampadarios and chanted with his teacher, whom he succeeded after his death and became protopsaltes. Impelled by the patriarch Cyril, he composed at the year 1756 A.D. all the pasapnoaria.

⁹⁸Nicephoros Kallistos Xanthopoulos was still living in the year 1341 A.D. He wrote a list of the hymnographers of the church.

⁹⁹Kassiane is also called Kassia and Eikasia. Paul, Kodinos and Theodoros the Prodromos report about her the following: "The monastery of Eikasia was built by the most pious nun Eikasia, a virgin and a beauty in appearance, who, being very wise, made in the years of the King Theophilos the music of many canons, stichera and some more worth of admiration." This was said by Kodinos. Paul Silentianos says: "The monastery of Ika-sia was built by her when she failed to reign with the King Theophilos. She had been pious and beautiful and made canons and stichera in the years of Theophilos and his son Michael, among which are the ones to the prostitute and the myrth, as indeed, all these are hers."

the Lesbian. The monk Cornelios. Our holy father Cosmas.¹⁰⁰ Constantine Magoulas. Constantine from Achialos. Constantine Porphyrogennetos.¹⁰¹ Kandimir.¹⁰² Cyril of Tenos.¹⁰³

L

59. Laskaris Pagonites. Leo the Wise and Emperor.¹⁰⁴

"But much earlier, it is known from the unwritten tradition, a woman of the nobility, a wise woman and a virgin called Kasia, was leading figure in chant and attempted also the canon (of the Holy Saturday). The chant was later admired but judged unfit because the musical creations of the hero Cosmas were mingled with feminine words. So, delivering the chant and the sacred hymns to Mark, the composition of the troparia was permitted to him alone." Theod. Prod.

¹⁰⁰Meletios says in the Ecclesiastical History that Cosmas was similar to John Damascenos as regards his life and preaching. Souidas says: "The asmatic canons of John and Cosmas could never be compared to anything nor will they ever be until the end of our lives."

¹⁰¹Constantin Porphyrogennetos was the son of Leo the Wise. He was born in 905 and died in 959 A.D. He had great inclination to study and love for learning and he reigned for 47 years. He made the poems of the exapostellaria in the Octoechos, which are preserved with the music of Balasios and Peter in the second echos.

¹⁰²Kandimir wrote on music in Greek and Turkish, but only the Turkish which deals with foreign music is preserved. He invented also a rhythm, the so called zarpein. He descended from the family of the sovereigns of Moldoblachia and travelled through Turkey, Arabia and Persia where he was perfectly taught the music preserved in those places. The instruments he applied were the ney and the tambour.

¹⁰³It appears from his treatise on music that Cyros Cyril participated both in Greek singing and in ecclesiastical and foreign music. He was taught ecclesiastical music by the protopsaltes Panagiotes. He occasionally chanted together with Daniel in the Patriarchate. In the field of ecclesiastical music he also wrote about the neumes and the echoi with various examples. In the field of foreign music he wrote about the berdes, the makams and the rhythms.

¹⁰⁴Leo the Wise died in 911 A.D. He was the son

Leo Chalmeriotes. The monk Longinos.

M

60. Manouel, the son of Coronos. Manouel Gazes. Manouel Argyropoulos. Manouel Phokianos. Manouel Agalianos. Manouel the great orator. Manouel from Thebes. Manougras. Manouel Chrysaphes.¹⁰⁵ Manouel Goutas. Manouel, the present protopsaltes. Mark Eugenikos. Mark of Corinth. Meletios Sinaites.¹⁰⁶ Melchisedek, bishop of Rhaedestos. Michael Ananeotes. The priest Michael Coucoulas. Moschianos.

N

61. Nathanael of Nicaea. The domestikos Nephon. The holy monk Nikephoros Ethikos. Nikephoros from Chios, archdeacon at Antiocheia and student of Jacob the protopsaltes.¹⁰⁷ The domestikos Nikolaos. Nikephoros Tramoundanas, protopsaltes in Rhodes. Nikolaos Asan the Cypriot. Nikolaos from Andrianoupolis, student of John the Protopsaltes.

X,P.

62. Xenos Coronos, protopsaltes of Hagia Sophia. The holy monk Paisios. Panagiotos Chalatzoglou.¹⁰⁸ Pana-

of the Caesar Basil the Macedonian and his successor in the Kingdom of Constantinople, where he reigned 22 years. He made chants or ecclesiastical hymns in which the eleven eothina belong too. These are found in the old sticherarion and were re-composed by John Cladas and their melodies were abridged by Jacob the protopsaltes.

¹⁰⁵The old Manouel Chrysaphes was lampadarios of the Great Church at the time of Constantine Palaeologos, the last Emperor of the Romans.

¹⁰⁶He had been teacher of George the Cretan.

¹⁰⁷He teaches at Jassy of Moldavia.

¹⁰⁸The origin of Panagiotos' father was from Trebezond and his profession was chalatzes. He married in Constantinople. A monk, a relative of his and musi-

retos. Prasenos. Patzadas. Peter Glykys Bereketes.¹⁰⁹ Peter Lampadarios the Lacedaemonian, great teacher, called by the Ottomans Hirsiz Petro, because even when he heard a new chant for the first time, he was robbing it by writing it down.¹¹⁰ Peter Byzantios, surnamed

cian, came in his house and taught a few principles of music to his son Panagiotes. Seeing that he had a good voice and a natural talent for music, he advised him to go to the Batopedinon monastery on Athos and study under Damianos, who was then chanting there, as at that time well-informed chanters were missing in Constantinople. So, Panagiotes, after having studied under Damianos and having learned all the ecclesiastical chants preserved up to that time, returned to Constantinople and was admitted as protopsaltes in the Great Church. The chants of Panagiotes that have been preserved are the heirmos "Ὁ ὁρίξῃς ἡμῶν" with its kratema, another kratema in the echos barys and a few more.

¹⁰⁹He surpassed all the musicians in the sweetness of the compositions of the heirmoi, which were, therefore, called calophonic. Being a contemporary of Panagiotes, he was protopsaltes at Emathia. He was called Pereketes, because when he was teaching the heirmoi, whenever his students asked him whether he had more, he always said: "Pereket" It seems that he composed more than any other melodist listed here, except of Peter the Lacedaemonian.

¹¹⁰He studied as a child in Smyrna by some monk musician, by whom he received several lessons. Then, coming to Constantinople, he studied with the protopsaltes John, whose chants he imitated, expressing himself like him. He started chant-making while he was still a left domestikos. When the protopsaltes John fulfilled our common duty and Daniel became protopsaltes, Jacob should then become lampadarios as he was the right domestikos. Peter, however, transgressing the order, owing to the mediation of more powerful persons, became lampadarios and took as his domestikos Peter Byzantios. He was, therefore, despised by both Jacob and the teacher Daniel, whose hate was hidden, but made its appearance at times. He composed two anastasimataria, cheroubika and four kinds of koinonika for Sundays, some double and many triple koinonika of the year, polyeleoi, pasapnoaria, doxologies, an entire doxastikarion, the great kekragaria, some pasapnoaria, the "Ἀνωθεν οἱ προφῆται" and few more. He, moreover, composed secu-

Phygas,¹¹¹ student of Peter the great teacher and teacher of the teachers Gregory Lampadarios and Chrysanthos the archimandrite.

R,S,T,Ph and Ch.

63. Romanos the Melode who first invented the kontakia and composed over a thousand of them.¹¹² Sergios. Stephanos Hagiopolites. The priest Stylianos. Symeon, the people's drafter of the Great Church. Symeon Psyrizes. The holy monk Sophronios Kaffas. Chalibouris. Christophoros Mistakon. The priest Chourmouzes. The teacher Chourmouzes.¹¹³ The Cypriot holy monk Chrysan-

lar verses on the makams and the rhythms of the Ottomans. In his notes were also found fasls and pesrev written with the musical neumes. For all this he was called a great teacher. He created all this in short time, as he passed away while still a lampadarios, being badly consumed by a plague.

¹¹¹He was Constantinopolite and was educated in music by Peter the Lacedaemonian. He composed eight koinonika for the Sundays, eight cheroubika, one mathema, one doxology, some katabasiae left unfinished by his teacher and the entire Syntomon Heirmologion. He also interpreted many old chants. During the first time that Kallinikos from Nicaea was a patriarch, he was expelled from the clergy, owing to some errors of his and went to Cherson and from there to Jassy of Moldavia and having suffered unduly abroad, he passed away in the year 1808 A.D.

¹¹²His home town was Edessa. Arriving in Constantinople, he dwelled in the monastery of our most holy Theotokos at Kyros. He made the poems and the melody of the "Ὁ Περθεὸς σήμερον τὸν ὑπερούσιον τιμῆς" which he chanted on the pulpit and was admired and praised by all the auditors and then wrote and composed all the rest. See the Metaphrastes at October 1.

¹¹³As regards his homeland, he is Chalkean, that is from the island Chalke lying near Bythinia in the Propontis. He is a member of the three teachers of the new method of ecclesiastical music of contemporary Greeks and was appointed with Gregory Lampadarios to deliver in general the practical part.

thos, student of John Protopsaltes. The archimandrite and teacher Chrysanthos.¹¹⁴ Chrysaphes the Young, Protopsaltes.¹¹⁵

64. These are the persons that in the course of time have been chant-makers and teachers of ecclesiastical music preserved among the Greeks, which our mother Church rescued for us from the great wrecking of the Race. Because, when musical psalmody disappeared from Constantinople it was preserved in the Churches of Peloponnesos and Crete. When later it fled away from there too, it was preserved in the Sacred Mount of Athos, as the propagation of music served the people of the church for many occasions, but primarily for the vigils, that is the ceremonies that last all night long. Thereafter, it was transferred from Athos to Constantinople again by Chrysaphos the Young, Panagiotos and Bereketes.

65. The most outstanding treatises dealing with such music are:

1. The one inscribed "Grammar of music" by John Damascenos and Cosmas the Melode. It is written in the form of question-answer and is found in the old sticheraria that are written on parchment.¹¹⁶

¹¹⁴He was from Madytos, a city lying by Hellespontos. He is a member of the Three Teachers, the inventors of the new method of ecclesiastical music and was appointed to deliver in general the theoretical part.

¹¹⁵Manouel Chrysaphes the Young flourished around 1660 A.D. He composed an anastasimatarion, sticherarion, cheroubika, koinonika etc. He also wrote a manual on music where the man appears sufficiently educated in psalmody and the Greek song. The manuscript of his manual is preserved.

¹¹⁶In other sources it is inscribed "Method elucidated by the holy fathers Cosmas, John Damascenos and John Chrysostomos." It appears, however, from the style, that it is not an authentic creation of any of the three.

II. The one inscribed "by John Cladas." It deals with the metronomia, the musical signs and the echoi.

III. The one inscribed "by John Plousiadenos or Coucoumas." It deals with the same subjects too.

IV. The manual of Manouel Chrysaphes, which deals with the neumes, the echoi and especially the phthorae.

V. The one on ecclesiastical and foreign music by the bishop of Tenos Cyril, which deals with the above and the tones and makams of the Ottomans.

VI. The one on the music of Kandimir, which is preserved in Turkish.

VII. The treatise of the monk Gabriel, the philosopher of the art of chanting. There exist more treatises of other less learned persons, which I consider needless to enumerate.

VIII. John Coucouzeles enumerates diligently the neumes and the theseis in use at his time for the extension of chant, in his Great Ison, which was interpreted by Peter the Peloponnesian. Such methods on which make progress the students that have been introduced in music, were made by other music teachers as well.

The Text of the Great Ison.

Ison, Oligon, Oxeia, and Petaste; and Diple, Kratema, Kratemokatabasma, Tromikon, Strepton, Thes and Apothos, Thematismos, Orthion; with these Ouranisma, Seisma, Trichisma, Synagma, Kylisma, Strangismata, Krouisma, other Anabasma and other Katabasma, Psephistokatabasma, Parakalesma, Aporrhoe, Antikenoma, Antikenokylisma, Argosyntheton, Kolaphismos, Kouphisma, Kratemokouphisma, Tromikoparakalesma; and Parakletike, Seirma, and another, Darmos, this is called Antikountisma, Choreuma, Heteron, Homoion, Synthesis of the great asma, another synthesis of the same, Heteron, Bython, Grontisma, Clasma, both Chaeretismos; and equally Bareia, Piasma, Echades, which is called Diplopelaston, Thema haploun, end of the sticheron on this, Barys, another tetraphonic barys, Anapauma, Darta. All these with Epegerma, Stavros, Anapauma to day, ne. Gorthmos, Diplopelaston, phthora, Enarxis, Gorgon, Argon; and attention student, four pneumata, seven sounds doubling and three kratemata art-

fully composed by the Maistor John Coucouzeles.¹¹⁷

66. It is deduced from the enumerated writers that the use of the neumes of ecclesiastical music was in good state in the years of the Emperor Theophilos, who was regarding it an honour to be a melodist and to do the cheironomia in the Great Church. There was a musical school in the Palace, where the beginners were taught chanting and the cheironomia. There must have been some didactic treatises on these two subjects, not preserved to us. Nevertheless, the creations written and composed with the neumes mentioned are preserved and we hereby give our conclusions about them.

67. The Greeks used as neumes for the writing of chants the letters of the alphabet, as stated by Aristides and Alypios. The neumes with which John Damascenos wrote his chants and which are preserved up to our days in our music, were discovered later. After this, the signs that are in use among the Latins and all the Europeans were contrived. However, neither the first or second and third ways of writing the chants was irreproachable and in the course of time the two ways were cultivated only--the European and ours--and corrected with additions and retrenchments.

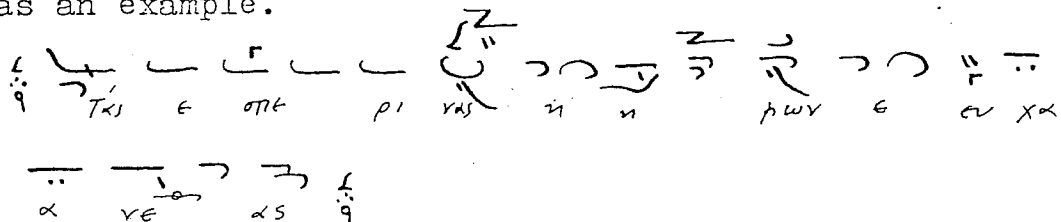
68. The neumes applied by our psalmodists from the time of John Damascenos up to John the Protopsaltes resembled to the hieroglyphic symbols of the ancient Egyptians, because as their symbols had the power to represent not only many syllables but also words and complete meanings, similarly, one or two of the neumes represented one as well as many notes and even entire melodies. And up to the time when the musical creations were still

¹¹⁷This is found inscribed, as it was notated by its creator, in all the papadikae; it is found inscribed in the anoixantaria as it was interpreted by Peter.

few, the students were learning them easily and in a short time, being familiarized with them. However, as time went by and the creations of the teachers increased, the teaching and transmission of the ecclesiastical songs to the students required proportionally longer duration.

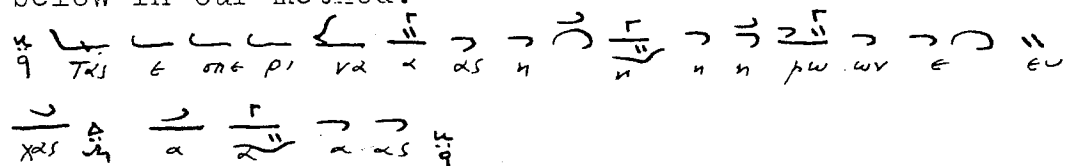
69. In the years of Manouel Chrysaphes some music teachers appeared who were saying that all music consists of, is the metrophonia and that everything said about the hypostaseis and the theseis were useless. Chrysaphes, opposing them, wrote his manual on music, which shows nothing more than a refutation of such views, an exposition of the neumes and the theseis and a somewhat obscure elucidation of the phthorae. Nevertheless, since that time, the teaching of the metrophonia was preserved up to us and the teachers deliver the anastasimatarion first with the parallage, then with the metrophonia and finally as a chant.

70. Parallage was to adapt the polysyllable notes on the written neumes of the quantity of melody, chanting them continuously in ascent and descent but never on the ison or discontinuously. Metrophonia was to chant the composed troparion as the neumes that write the quantity of melody only require, without observing what the hypostaseis and the theseis require. As a chant was to sing the composed troparion as required by the theseis of the neumes and the hypostaseis, by which not only the quantity but the quality also of the chant is written, without disregarding the words of the text. For clarification, we give the following passage as an example.

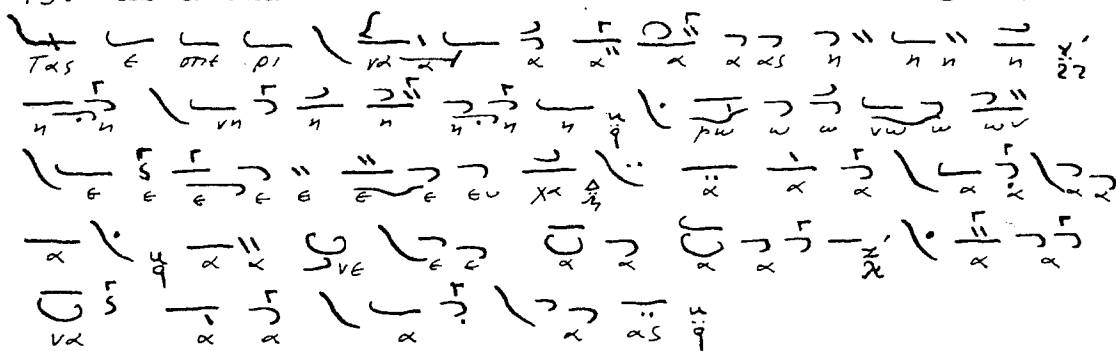


71. This passage was chanted with the parallage in the following way: annanes for the martyria; neagie, aanes, necheanes, aneanes for the chamele, as the apostrophos was subordinated; then, leaving the isa, they chanted neanes, nana, agia, annanes, neanes for the petaste and the hypsele; nana for the kentemata; necheanes, aneanes for the elaphron, as the apostrophos was subordinated; neanes, nana for the kentema, as the oligon was subordinated; necheanes, aneanes, neagie for the apostrophos; aanes, necheanes for the elaphron; nana for the kentemata; agia, annanes for the oligia; neanes, nana for the kentema; necheanes for the apostrophos; and aneanes for the syndesmos, that is the two apostrophoi.

72. With the metrophonia it was chanted as shown below in our method:



73. As a chant it was chanted in the following way:



74. The protopsaltes Panagiotes brought the ecclesiastical music from the music teachers of Athos, but it seems that when he delivered the chants to the students, he abridged some of the melodies of the theseis or, in other cases, he even transformed them, aiming, it is said, at pleasure and embellishment. It is possible, therefore, that the more or less different recitation of some theseis of the ecclesiastical chants by the teachers of Constantinople and those of Athos, sprung from

this fact.

75. His successor, John the Protopsaltes, was publicly saying that the difficulty--due to the amount of time required--of the teaching and transmission of psalmody ought to be removed from their creations (Probably, he became an imitator of his teacher Panagiotes, as, it seems, the characters of the teachers are usually transmitted to their students) and that a simpler, more methodical and elementary system of neumes ought to be established, by which to become possible to write and transmit any kind of melody unaltered. So, in the year 1756 John was impelled by the music-lover Cyril, who at that time was steering straight the helm of the patriarchship, to compose pasapnoaria, polyeleoi, doxologies, koinonika etc. and he applied a way of writing, different from the old and closer to the interpretative, which became the root, indeed, of the interpretative writing applied by his student Peter.

76. Daniel the Protopsaltes, the successor of John, drawing from his teacher Panagiotes, wanted to imitate this interpretative way as we see in his polyeleon and doxology. Consequently, in his chants there are newly introduced theseis, such that have never been used by the psalmodists before or after him. Because of these, some people have dared to accuse him of ignorance. He was obliged to innovate because he tried to introduce some foreign chants in the church, chants that were used in his days by the instrumental musicians and could not be written with the theseis of old ecclesiastical music. Daniel being a friend of Zacharias Chanendes,¹¹⁸ learned much about foreign music from him and, likewise, Zacharias was mutually taught by Daniel the ecclesiastical chants. So, Zacharias was composing, it is said

¹¹⁸We spoke above about him. The word hanendes means in Turkish the melodist.

by some, heirmoi which Daniel wrote with the musical neumes, but he did not deliver them to his students and therefore, we do not know their music, though many chanters have them. Now, whenever these chanters are questioned about this, they say that the heirmoi of Zacharias had not been written by Daniel and, therefore, were not delivered by him. Qualitties of Daniel are the sobriety and richness of invetiveness, as whenever he comes to a phthora he isnsists in its melody to the point of satiety and does not go away from it quickly; and such a chant-maker is indeed, praiseworthy.

77. When Daniel was protopsaltes, Peter the Peloponnesian was lampadarios. He was writing day and night, explaining the old musical lessons and was carefully writing down any melody that reached his imagination either from the outer or the inner world (as it is said that he was distinguishing a melody created by the wind when it fell upon the glasses of the windows) and setting to music on the makams and rhythms of the Ottomans as many verses were given to him (because in that time a spirit of verse-mania prevailed among the noble men and intellectuals of our nation), he came close to transform the musical neumes from symbols into letters. Maybe, he is the only one among our musicians to approach the top of the state of practical music, as what is said about Greek musicians when Constantinople fell to the Ottomans--that they were able to write the chants right away when played with the musical instruments and pronounce them perfectly unaltered with the first hearing--which is much doubted, is certainly true about Peter, as this is reported by eyewitnesses, who being the best of our nation, are trustworthy. The Ottomans were playing new, never heard before melodies invented by them and he was writing, chanting and playing them on the tambour. When this

became known it had as result the ruler of the time to show him his favour and give him a free pass in the Palace.

78. Jacob the Protopsaltes, the successor of Daniel preserved what was delivered to him accurately, advancing persistently on the footsteps of his teacher and did not enjoy innovations that much. When Agapios Pallermos from Chios, who was sufficiently educated in European music, came to Constantinople and presented himself to the patriarch Mr. Gregory, he mentioned to his very holiness and the entire holy Synod that it would be advantageous if the chanters of the Great Church were taught a musical system composed by him¹¹⁹ which was endowed with the gifts of the European system but did not participate in its defects and if they looked either to correct the ecclesiastical system, giving it the proper analogies, or to create another more up to date, or keep the one offered by Agapios himself and transcribe with this all the ecclesiastical chants known to them. With such words he wholly convinced his very holiness but was not able to attract Jacob completely. So, it was ordered that Agapios would teach in the Patriarchate and that the domestikoi, among others, would be taught by him.¹²⁰ However, be-

¹¹⁹He travelled through Europe in purpose, in order to be perfectly taught the music of the Europeans and then, returning to Greece to benefit his compatriots. So, after he became sufficiently strong in the music mentioned, he came to the Sacred Mount, but as he did not fulfill his aim there, he went to Ephesos. As he failed there too, he came to Constantinople during the first time that Gregory Peloponnesian from Smyrna was the patriarch and was teaching music with the notes of the Europeans. Failing again, he altered the system and when he came to Constantinople for a second and third time, he was using the alphabet. He died in Bucarest in the year 1815.

¹²⁰The right first chanter has the office called protopsaltes; the left first chanter has the office

cause of the unpersuasion of the protopsaltes Jacob and his ironies on the pronunciation and the manner of teaching of Agapios, this attempt did not bear fruit. So, Jacob, the zealot of the ancient tradition of ec-

called lampadarios; the second chanters of the left and right choirs are surnamed domestikoi.

The patriarchs in the course of time were greatly concerned with the preservation of ecclesiastical music. Evidence of this is given here and in many other instances, but mostly in one document made at the time of the patriarch Neophytos, which is preserved in the sacred Codex and the preface of which is given here below.

"The obligation laid upon us for the generous care of the decency, virtuous state, inclination for perfection and improvement of the holy churches of God, even the ones lying far away and everywhere, is not a small one and this obligation is much greater for the decorum, harmonious orderliness and decency of our great Church of Christ, the common mother of all devout Christians the world over. Generous prizes should be offered on behalf of it; we should concern ourselves scientifically and vigilantly look after the conservation and maintenance of its decency and sumptuousness. Carrying out this obligation laid upon us, after a minute research done with common consultation of the sacred brotherhood dwelling here, the Holy Synod and the most esteemed intendants of the Koinon of our Great Church of Christ on the state of the very musical chanters, the protopsaltes Mr. Jacob, the lampadarios Mr. Peter and the students taught by them in our most venerable Great Church of Christ, we were assured that their work is neglected and that the persons studying by them do not progress forward, nor have they the possibility to officiate in our Great Church of Christ when some one passes away; the very obvious cause to this being that the fees of these very best in ecclesiastical chant-creation as well as any gain and profit they draw from the Church's income, do not suffice them. Because of this state, the art of ecclesiastical music, that these men only can teach and thus benefit many people, is in danger to become effaceable.

Therefore, it is necessary for the orderliness and harmony of the Church to show not just a casual concern, because we know that their needs ought to be satisfied, their fees increased and this way, provide. . .

In the year of Grace 1791

December 2.

clesiastical music, set to music a doxastikarion in which he tried to include all the old theseis of the sticherarion, leaving not even the most commonly used among the later theseis. He wanted the old theseis to be pronounced according to the tradition of the old teachers and not to be altered with abridgements or other adornments. When he wished to use any of them in the new way, he was writing it explanatorily. In spite of that, he himself abridged--with embellishment, as he said--the great kekragaria, the eothina and the polyeleos of Daniel.

79. The protopsaltes Peter Byzantios, who succeeded Jacob, being in favour of orderliness and good rhythm in psalmody, was often reproving Jacob because he was breaking the rhythm of the prosomoia in order to chant supposedly with the meaning. This Peter learned the power of the cheironomia, which was used by the chanters in the church and he was saying:

If I only knew that there exists even in America some one well informed in the cheironomia, I would go in spite of my poverty, to study it with him.

This Peter was the only one that could interpret and write like his teacher Peter the Lacedaemonian. Whence, his interpretations brought doubts as to whether they were done by him or by his teacher. For this reason all the students were taught the lessons from both Jacob and Peter and the new ones from Peter alone. He promised to interpret all the old lessons of ecclesiastical music if only he could find persons to reward his efforts. Nevertheless, his interpretations did not remain unavailing; the superintendents of our school took interest and bought all his books for their use in that school.

80. When he departed or was expelled, he was succeeded by Manouel, the present protopsaltes, in the days of whom is fulfilled what was missing in our ecclesiasti-

cal music, that is, the measurement of time spent in a melody, the definition of scales, neumes and all the rest which has not been introduced in our ecclesiastical music up to now and the application of which is introduced by the Three Teachers. The fact that the old chants do have an orderly time motion and fit, therefore, in the meters more than the new chants, is due to the cheironomia or the rhythm which was not unknown to the fathers of these chants. Manouel composed the "Μακάριος ἄνθρωπος", the antiphones and a short doxology in the echos barys. He fulfilled our common duty in the year 1819, June 11.

81. Now music is offered to the music lovers as it was initiated by John Damascenos and with the improvements it received up to now. It preserves the original old chants but also approaches the later ones; it makes use of the handy old neumes but has acquired a few lately too, which were necessary. What is it then, old or new? It is neither old or new, but one perfected in the course of time.

HOW SHOULD MUSIC BE APPROACHED

82. "What is beautiful is beloved and what is not beautiful is not beloved" said Theognis. Whence, in order that the chanter is beloved and not despised by the auditors, he should be beautiful. Beauty in chanting consists of:

I. Good voice. Otherwise it is "equal with sowing the sea with grains of salt from the city."

II. In addition to that it consists of the natural or acquired through education mimetic disposition of the chanter. Because the chanter is often obliged by the melodies that are common in the various places, or rather, by the customs of the inhabitants (as every place has its own habits as regards the pronunciation of both chanting and speech) to pronounce not only the melodies but the words of the verses too, accordingly. If he is able to imitate them, he is successful, if not, he achieves nothing.

III. Those being granted, it consists also of the chanter's satisfactory education in his own language (as it is not possible for all the musicians to be philosophers too) in order to understand the meaning of what he chants, because the chanter must chant joy merrily and sorrow grievously, he must ascend there where height is understood and descend where depth is understood and realize the melodies strictly according to the meanings.

83. Whoever is such and wishes to be taught music, should not be under or above age; he should, that is, neither be below the age of thirteen or an oldman. He has to remain under the instruction of vocal or ins-

trumental music for one, two or, at the most, three years so that he will not hinder himself from other more benefitting studies because of music. He might, in relation to this, obey Plato who says:

The ordinary time to start playing the lyres is when they become thirteen years old. They should continue studying for three years; no less or more than that.

84. When taught music, he should take care with the following four:

I. To pay much attention to the teacher and to learn the chant taught in such a way that there will be no obvious difference in the pronunciation of the chant he was taught, because in chanting more than anywhere else, vanity enslaves most people and does not let them judge correctly. One, therefore, should have well informed judges in chanting, in order that they judge his correctness.

The beautiful things that you do
do not seem beautiful to us.

II. He should not want to innovate in the pronunciation, the writing or the realization of foreign chants, embellishing or abridging them. Usually, people the more ignorant they are in music, the more have they the insolence to correct the foreign chants. Since, however, it is permitted to anybody to compose whatever he wishes, is it reasonable that people modify and transform foreign chants?

III. He should try to make his own chants, imitating those of his teachers, showing them to impartial judges and correcting what is criticised with tolerance without insisting obstinately on the errors ignored, which are often covered by arrogance with the jacket of correctness. Moreover, he should consider for himself the saying of the wise man:

Not everything that human beings
wish for reaches its fulfillment.

IV. He should not be disgusted at the first contact with foreign chants, or criticise them before he studies them for a long period of time and with much attention. Instead, he should decide to deduce the proper criticism, only after he has learned them well and mastered them perfectly. Because everything in music is familiarity, as Plutarch said and, therefore, the quality of a new and unusual chant can only be known after one becomes familiar with it. Besides, many chants that disgust the auditor in the morning, please him in the night.

THE END

APPENDIX I

MUSICAL TRANSCRIPTIONS

pars. 45 and 255

px ne zo ne pa bou px ne px bou ga bou px bou ga di ga bou ga di ke di ga bou
ga di ke zo ke di ga di ke zo ne zo ke di ke zo ne px ne zo ke di ke zo
ne zo ke di px di ke zo ke di ga bou ga di ke di ga bou px bou ga di ga bou
px ne px bou ga bou px ne zo ne px

par. 46

px ga bou di ga ke di zo ke ne zo px px zo ne ke zo di ka ga di bou
ga px pa di bou ke ga zo di ne ke px px ke zo ga di px px
ke bou zo ga ne di px pa di ne ga zo bou ke px px zo bou ne
ga px px ga ne bou zo px pa ne bou px px bou ne px px px px px

par. 68

An-ux-nes ne-x-nes ux-ux α-gl-α A-α-nes ne-che.
 α-nes A-ne-α-nes ne-x-gi-e An-ux-nes.

par. 183

par. 246

Ne-che-α-nes ne-ux-no ne-α-nes ne-ux-no ne-α-nes
 ne-ux-no ne-α-nes ne-ux-no ne-che-α-nes ne-ux-no
 ne-che-α-nes ne-ux-no ne-che-α-nes ne-ux-no ne-che-α-nes.

par. 249

Ne- che-α- nes ne-ηα- nō ne-α- nes ne-ηα- nō an- ηα- nes ne-α-
 nes ηα- ηα α- gi-α α- α- nes ne- che-α- nes α- ne- α- nes
 ne- ηα- nō ne- che-α- nes ne-ηα- nō ne- che-α- nes

par. 250

An- ηα- nes ne-α- nes ηα- ηα α- gi-α an- ηα- nes ne-ηα- nō
 ne-α- nes ne-ηα- nō ne- che-α- nes ne-ηα- nō ne- che-α- nes ne-
 α- gi-e α- α- nes ne- che-α- nes α- ne-α- nes.

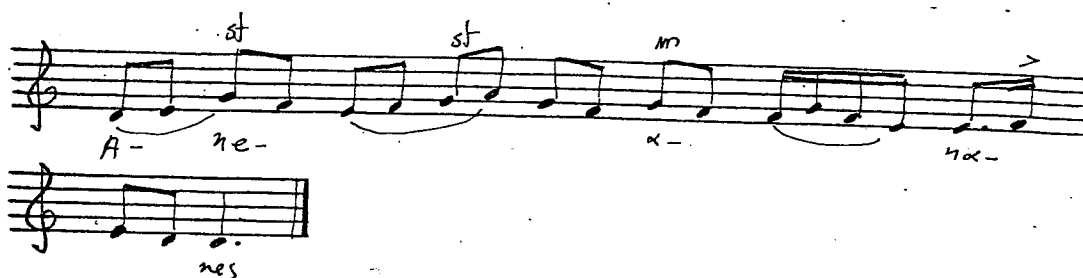
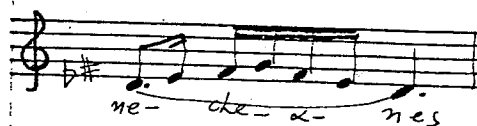
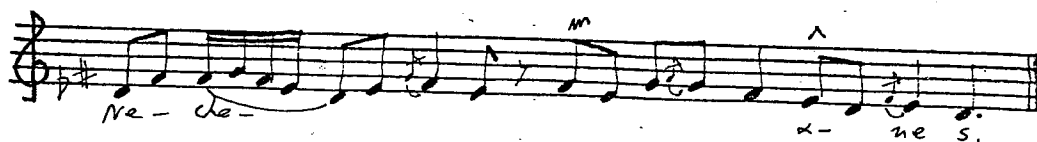
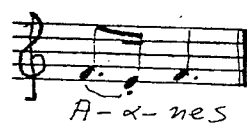
par. 309

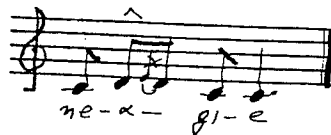
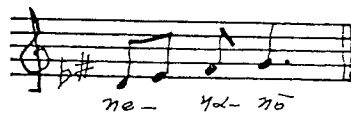
A- ηα- ne- α- ne-
 es

an- ηα- nes

ne s

par. 310par. 311par. 312

par. 313par. 314par. 315

par. 316par. 317

par. 70, Part II

Two staves of music in 4/8 time. The first staff has the lyrics "Τὰς ἐ-οπε-πὶ-νὰς" and "ἡ-". The second staff has the lyrics "εὐ- χα- α- s". Both staves include dynamic markings such as *sf* and *f*.

par. 72, Part II

Five staves of music in 4/8 time. The first staff has the lyrics "Τὰς ἐ-οπε-πὶ-νὰς" and "ἡ-". The second staff has the lyrics "(vη) sf" and "ἡ- sf". The third staff has the lyrics "εὐ- χα-". The fourth staff has the lyrics "(ve) α-". The fifth staff has the lyrics "(ve) α-". Both staves include dynamic markings such as *sf*, *f*, and *α-*.

APPENDIX II

TRANSLATOR'S NOTES

PROLOGUE p.xxxix

^aAs mentioned by the translator in the Introduction (p.xxiii) Chrysanthos was from Madytos. Dirrachion was the city where he was appointed archpriest as a reward to his services in Church Music.

^bThis is a reference to the solmization syllables pa, bou, ga, di, ke, zo, ne. The information in p. 250 above that Peter the Peloponnesian made the first attempt to invent such a system might be related to G. Papadopoulos' stating in Συμβολαί εἰς τὴν ἱστορίαν τῆς παρ' ἡμῶν ἐκκλησιαστικῆς μουσικῆς ("Contributions to the history of our ecclesiastical music") (Athens, 1890), p. 319 that Peter invented a sol-fa system, based on the Greek martyriae, which he taught to the reformator of Armenian music Ham-partoun.

^cFor an explanation of these offices, see n. 120, pp. 251-252.

^dPatriarch at the time was not Cyril VII, but Cyril VI (March 4, to December 13, 1818).

FIRST BOOK

CHAPTER I p. 1.

^aAristides Quintilianus De Musica, (ed. Winnington-Ingram), I. p. 4. 18.

^bThe ancient Greek conception of the musical sound. See De Musica, I. p. 5. 25.

^cEucleides Rudimenta Musices, (ed. I.P. Regio) (from now on referred to as Rudimenta), p. 5.; same definition also in De Musica, I. p. 4. 22-27.

^dI disregard the instruction in the errata "read: unartistically, artistically and scientifically" as it further obscures the sentence.

^eThe passage "synonymous with each of the existing. . . acting" is quoted from De Musica, I. p. 6. 17-22.

^fIson is the vocal accompaniment of a chant with long pedal notes. It derives its name from the neume. See p. 10.

^hAristoxenos calls "hermosmenon" the combination of intervals and notes that obey certain rules of composition "not accidentally." Harmonic Elements, (ed. Macran) I. p. 110. 7-10.

CHAPTER II p.6.

^aChap. i of Chrysanthos' Introduction to the Theory and Practice of Church Music (Paris, 1821), (from now on referred to as Introduction) corresponds to pars. 14-19 of this chapter.

^bThe second supposition prevail today, the minimum tones zo-ne and bou-ga corresponding to the semitones B-C and E-F. The transcriptions in Appendix I obey this generally accepted practice.

CHAPTER III p. 10.

^aThe entire chap. ii of the Introduction is comprised here. Pars. 28 and 29 are additional.

CHAPTER IV p. 12.

^aStarting with par. 38, the text is identical with chap. iii of the Introduction.

CHAPTER V p. 14.

^aChap. iv of the Introduction corresponds to pars. 44-47 of this chapter.

^bConcerning the polysyllable notes, see chap. ix, p. 25.

CHAPTER VI p. 17

^aRudimenta, p. 5; Harmonic Elements, I. p. 107. 25-26; De Musica, I. p. 10. 18-19.

^bThese names--in addition to tambouras and tambourin--designated in Byzantine and post-Byzantine periods the instrument known today as "bouzouki". (In Crete the name tamboura is still in use today.) The instrument has three pairs of strings at the intervals of a perfect fifth and a perfect fourth and is played with a plectrum. Its size varies from 0,70 m. to 1,00 m. See F. Anoyanakis, Instruments de Musique Populaire Grecs (Athens, 1965), p. 37.

For the significance of the word "buzz", see n. 4, p. 21.

^cQuoted from Rudimenta, p. 5.

CHAPTER VII p. 19.

^aThe definition is exactly: "Symphony is the blending of two notes, one of which is higher, the other lower." (Ibid., p. 8.)

CHAPTER VIII p. 22.

^aWrongly attributed to Eucleides. The sentence is a literal translation from De Musica, I. p. 13. 4. Eucleides' definition is: "System is what is composed of more than one intervals." Rudimenta, p. 5.

CHAPTER IX p. 25.

^aDe Musica, II. p. 77. 30 - p. 79. 14.

CHAPTER XII p. 38.

^aThe entire chap. xix of the Introduction is included here.

^bConcerning the phthorae, see chap. xiv, p. 160. Throughout this book the letter n of the polysyllable notes is written as 2 instead of the Greek letter ν. We read thus α??α?εζ, ?α?α etc, instead of ανναβεζ, νανα etc.

SECOND BOOK

CHAPTER I p. 43.

^aFor a definition of the melodic "thesis", see p. 177, n. 4.

^bThe two last paragraphs of this chapter and the following chapter correspond to chap. v of the Introduction.

CHAPTER II p. 45.

^aThe significance of the gorgon and its derivatives and the interpretation of the tempo marks (see following note) are the only substantial differences in the two books of Chrysanthos. In the Introduction the gorgon acts as follows: When it stands by itself, it divides the chronos into two ($\text{C} \text{C} = \text{C}_2$). When it is with an huple, it divides it into three ($\text{C} \text{C} = \text{C}_3$ or $\text{C} \text{C} = \text{C}_3$). When it is with a dipole, it divides the chronos into four ($\text{C} \text{C} = \text{C}_4$ or $\text{C} \text{C} = \text{C}_4$). The digorgon divides the chronos into three ($\text{C} \text{C} = \text{C}_3$). The digorgon with an huple divides the chronos into four ($\text{C} \text{C} = \text{C}_4$, $\text{C} \text{C} = \text{C}_4$ or $\text{C} \text{C} = \text{C}_4$). In the Introduction the gorgon is also used to indicate the silence of half a chronos ($\text{C} = \gamma$).

^bThe interpretation of the tempo marks in the Introduction is: $\text{C} = 1$ chronos lasts 1 second

$\text{C} = 1$ chronos lasts 2 seconds

$\text{C} = 1$ chronos lasts $\frac{1}{2}$ second

$\text{C} = 1$ chronos lasts $\frac{1}{4}$ second.

CHAPTER III p. 49.

^aThe entire chap. vi of the Introduction is included here.

CHAPTER IV p. 51.

^aUp to this point the information is additional to the otherwise similar chap. vii of the Introduction.

^bThe fact that the distinction of the neumes into spirits and bodies is only mentioned here and in par. 214, is justified in the Introduction, p. 54, n. 1, by its editor who says: "Since the natural power of the spirit is to give life to the body, how then now (when the two are composed) the spirit takes away the life from the body and leaves it voiceless, while when it is apart, the body lives anew?"

CHAPTER V p. 54.

^aWrongly cited. Cf.: "The Greeks honoured rhythemics in earlier times and everything concerning the instrumental dialects was more varied. The Greeks are fond of tones nowadays, but then they were fond of rhythm."

^bThis awkward definition of rhythemics is the result of the writer's attempt to alter the order of phrasing in the paragraph cited: "Rhythm is a system composed of chronoi in a certain order; we call their affections arsis and thesis, thud and stilness . . . arsis is the impetus of a body upward, thesis is the impetus of the same body downwards; rhythemics then, is the science of the application of these mentioned here above." De Musica, I. p. 31. 8-17.

^cQuoted from Rhythmic Elements, I. p. 75. 5-6.

^dFrom "The aspects of rhythm. . . ." to this point the passage is quoted from De Musica, I. p. 31. 3-7.

^eFrom "In the past. . . ." to this point, the passage is quoted from ibid., p. 40. 20-25.

^fFrom the beginning of the paragraph to ". . . the motions of the body, the melody and the text." the passage is a literal translation from ibid., p. 31. 18-22. From there on, it is a translation from ibid., p. 32. 8-10.

CHAPTER VI p. 57.

^aParaphrase of: "First is the chronos which is the atom and the minimum; it is also called point. I call it minimum as such it seems to us, being the first conceived by the sense. It is called point because it is uncompound, like the geometers named point what they considered indivisible." Ibid., p. 32. 11-15. The comparison of the minimum chronos to the geometrical point explains the terms one-point, two-point etc., used in chap. vii.

^bFrom "compound is called" to this point the passage is partly quoted and partly translated from ibid., p. 32. 25 - p. 33. 2 and from p. 33. 4-10. The terms short and long chronoi and their corresponding signs are discussed by Aristides Quintilianus in the chapter on meter, which, according to him, differs from rhythm as the former refers to the text, though the latter to the melody.

^cQuotation from ibid., p. 33. 3-4.

^dQuotation from ibid., p. 33. 30.

^eIbid., p. 33. 29 - p. 34. 4.

CHAPTER VII p. 60.

^aCf. ibid., p. 33. 12-12: "A foot is part of an entire rhythm and permits us to comprehend the general rhythm. Parts of it are two, the arsis and the thesis."

^bNote that the discussion on feet is supported here with a quotation concerning the chronoi. Though this and the following chapters are entirely based on De Musica, as the succession and number of the exposed feet and rhythms, their names, the style and the language testify, Chrysanthos has altered Aristides' terms, using more popular ones. Often, however, as in pars 190 and 191, the terms are left as they are in De Musica and thus confuse the reader.

^cThe first sentence is from ibid., I. p. 33. 30 and has been used by Chrysanthos before (see n. e above). The rest is from ibid., I. p. 34. 15-18.

^dIbid., p. 35. 22.

^eIbid., p. 35. 18-21.

^fIbid., p. 35. 7-8.

^gIbid., p. 36. 29-30.

^hIbid., p. 36. 30 - p. 37. 2.

ⁱThe entire par. 157 is from ibid., p. 35. 3-13. Par. 158 is from ibid., p. 36. 1-6. Par. 159 is from ibid., p. 37. 5-9. The expressions such as "Anapaestos with the major" imply: Anapaestos starting with the major foot.

^jThe first paragraph of n. 8 is from ibid., p. 37. 9-12. The quotation in the second paragraph is from ibid., p. 34. 19-24.

CHAPTER VIII p. 63.

^aFollowing the order in De Musica, Chrysanthos brings here the chapter on meters. He disregards, however the ancient theory to introduce, under this title, the application of European bar-lines for the division of rhythm. There is evidence that he adopted this system at least since 1811. In the private collection of C. Psachos exist two manuscripts written by Chrysanthos in the Old Method, the melodies of which are divided into "metric feet" with vertical red lines. The earlier is a papadike ". . . composed by the very musical Peter Lampadarios the Lacedaemonian and divided into meters by Chrysanthos in the year 1811." The latter is a Doxastikarion by the same composer ". . . written with the system of Chrysanthos for his students in the year 1818." See C. Papademetriou, Note on the Small Theory of Chrysanthos from Madytos (Athens, 1931), p. 235.

CHAPTER IX p. 66.

^aFrom "Every rhythm is composed of the feet. . . " to this point, the passage is taken from De Musica, I. p. 35. 2.

^bIbid., p. 38. 28 and p. 39. 2.

^cIbid., p. 37. 2-3 and p. 36. 6-8.

^dIbid., p. 37. 22-23.

^eIbid., p. 37. 19-22.

^fIbid., p. 37. 24 - p. 38. 2.

^gIbid., p. 38. 12-13.

^hPar. 174 is from ibid., p. 35. 13-15. Par 175 is from ibid., p. 36. 6-8. Par. 176 is from ibid., p. 36. 4-6. Par. 177 is from ibid., p. 37. 13-p. 38. 12.

CHAPTER XI p. 72.

^aIbid., p. 38. 28-p. 39. 2.

CHAPTER XII p. 75.

^aThis and the preceding paragraph are a free translation from De Musica, II. p. 82. 4-p. 83. 21. which is all but five lines quoted in n. 1. Note that Aristides' terms "simple rhythms and composite rhythms" are left here as such (Cf. n. b of chapter VII, p. 270).

CHAPTER XIII p. 78.

^aDe Musica, I. p. 40. 1.

^bIbid., p. 39. 26-29.

CHAPTER XIV p. 80.

^aIbid., p. 40. 8-13.

^bThis and the two preceding paragraphs are a literal translation from ibid., p. 39. 3-25.

CHAPTER XV p. 83.

^aCf. n. b of chapter IV, p. 269.

^bThe names of the neumes described in this chapter denote: ison = straight, oligon = little, petaste = flying or thrown, kentema = pricking, kentemata = prickings (two is implied), hypsele = high or tall, chamele = low, apostrophos = turning away, elaphron = light weight, hyporrhoe = flowing under (used for liquids). The description of hand gestures refers to Byzantine ikonography and to the formalized movements of the priest during the service.

THIRD BOOK

CHAPTER I p. 86.

^aDe Musica, I. p. 15. 21-22.

^bDe Musica, III. p. 97. 3-14.

^cDe Musica, I. p. 8. 3-9.

CHAPTER II p. 92.

^aThe table is found identical in chap. viii of the Introduction.

CHAPTER IV p. 97.

^aNote that the addition of these intervals gives an octave of 64 lines instead of the established 68 lines. The difference is easily observed in the plate at the end of the chapter.

The diagram and description of the scale (A) is in chap. xi of the Introduction ("Concerning the second echos"). The diagrams of the scales (B) and (C) are given there in chap. xv ("Concerning the second plagal echos").

CHAPTER VII p. 105.

^aDe Musica, I. p. 17. 11-13

^bAmong these, the second is only found in the Introduction (chap. xiv, "Concerning the first plagal echos").

CHAPTER VIII p. 109.

^aRudimenta, p. 7.

^bDe Musica, I. p. 17. 11-p. 18. 4.

FOURTH BOOK

CHAPTER I p. 115.

^aThe word echos means sound as well as mode.

^bIn the original it is the word φωνή that has been used in both the text and the foot-note. This word means voice in modern Greek but both voice and sound in the classic Greek.

^cIndeed, the passage is quoted from Aristides' definition of petteia, not of mode. See De Musica, I. p. 29. 18-20.

CHAPTER VI p. 134.

^aParas. 320, 321 and 322 correspond to the entire chap. x (on the first echos) of the Introduction, par. 320 being identical with the beginning of this chapter. The diagrams are found in chap. xiii of the Introduction ("Concerning the fourth echos").

CHAPTER VII p. 138.

^aThis and the two preceding paragraphs correspond to chap. xi ("Concerning the second echos") of the Introduction.

CHAPTER VIII p. 141

^aA second, diatonic scale in use for the third echos is also mentioned in the corresponding chap. xii of the Introduction.

CHAPTER IX p. 144.

^aThis and the two preceding paragraphs correspond to chap. xiii ("Concerning the fourth echos") of the Introduction.

CHAPTER X p. 148.

^aThis and the two preceding paragraphs correspond to chap. xiv (with same title) of the Introduction.

CHAPTER XI p. 151

^aThis and the two preceding paragraphs correspond to chap. xv (with same title) of the Introduction.

CHAPTER XII p. 154.

^aIn the corresponding chap. xvi of the Introduction no mention is made on the difference between the scale of the echos barys and that of the third echos.

CHAPTER XIII p. 157.

^aUp to this point the text corresponds to chap. xvii (with same title) of the Introduction.

CHAPTER XIV p. 160.

^aIn the corresponding chapter of the Introduction (chap. xvii) two phthorae are only mentioned, the ρ and the σ . Consequently, the information and diagram of par. 381 are missing there.

FIFTH BOOK

CHAPTER I p. 165.

^aQuotation from De Musica, I. p. 28. 10-11.

^bQuotation from ibid., p. 29. 21-22.

^cFrom "Chant-making distinguishes three registers" in par. 393 to this point, the passage is a free translation from ibid., p. 28. 11-p. 29. 17.

^dFrom par. 393 to this point, the passage is a translation from Rudimenta, p. 13.

^eFrom par. 396: "Diastaltic ethos is the one. . . ." to this point, the passage--except for the reference to the echoi at the end of each paragraph--is a literal translation from ibid., p. 13.

^fIbid., p. 5.

CHAPTER III. p. 172.

^aQuoted again in previous chapter. See n. f, p. 275.

CHAPTER VI p. 190.

^aThe first quotation is from De Musica, II. p. 66. 11-p. 67. 3. The second quotation is from ibid., p. 56. 27-p. 57. 12.

^bThe entire paragraph is translation from ibid., p. 80. 10-22.

CHAPTER VII p. 203.

^aHarmonic Elements, I. p. 95. 3-7. The reference to the past is in the original.

^bRudimenta, p. 1.

^cHarmonic Elements, I. p. 95. 17-20.

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